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Original Communications.

ART. I.—*A Lecture on Practical Education in Medicine, and on the course of Instruction at the New York Hospital, delivered at the Hospital, on the 3d of November*, 1846. By JOHN WATSON, M. D., one of the Surgeons of that Institution.

GENTLEMEN: The Physicians and Surgeons of this Hospital, as most of you are aware, have for years past devoted much time and attention to the business of Instruction.

Ever since the first organization of our associated courses of teaching here, it has been usual to commence, at each season, with an introductory Address. In conformity with this custom, and at the request of my colleagues, it becomes my duty on the present occasion to bid you welcome, and to preface our coming winter course of clinical instruction with a few general remarks.

The subject assigned to me for the present discourse, though not of my own choosing, is perhaps the most appropriate that could have been selected for the occasion. I have been called upon to address you on the subject of Practical Education; and in connection with this, to speak of the New York Hospital as a clinical school.

The task imposed upon me I have heartily accepted, doubting only my ability to execute it properly, and regretting that a theme so worthy of serious consideration, has not been assigned to some one more capable than myself of presenting it to you in a lucid and impressive manner.

But, gentlemen, I have first to bid you welcome. And I am at a loss how to perform this portion of my duty more becomingly, than by stating, in a few words, the fare we have in readiness for you.

The physicians and surgeons of large hospitals, whether specially appointed for the purpose or not, rest in some measure under two obligations to their fellow practitioners. In the first place, they are expected to employ the means at their disposal for extending the bounds of medical knowledge, by recording and communicating the result of their ex-

perience. In the second place, they are looked up to as the proper teachers of all the practical details of the profession.

These duties, it is true, so far as we are here concerned, are as yet merely implied. Nevertheless, these implied duties, and particularly that of teaching, are every day becoming more imperative. For it is only by hospital and bedside instruction that students can ever expect to become qualified for entering upon the practice of the healing art, either with credit to themselves, or with safety to their patients.

Aware of these reasonable expectations on the part of the profession, and impressed with the paramount advantages which the liberal and enlightened Governors of this Institution have placed at our disposal, my colleagues and myself have spared no pains to render it available, by furnishing the students with every facility for acquiring a practical knowledge of the nature and treatment of disease.

In pursuance of this object, the wards of the Hospital are visited at stated hours; and during these daily visits the students have access to all the cases excepting only such as are likely to be injured by fatiguing examinations and inquiries. Clinical remarks are daily made in the wards; and for fuller expositions of important cases, each student, on inquiry, can have access to the Hospital Case Books. Several series of Clinical Lectures on the details of hospital service are every year delivered in this Theatre, illustrating in this way most of the important points of pathology and therapeutics.

The students are kept informed of the results of our numerous consultations, and now and then admitted to attend them. The indications and modes of proceeding in our surgical operations are explained to them. They have the use of our valuable library, rich in every department of medical lore. Among not the least of their privileges, they are furnished with opportunities for prosecuting the study of pathological anatomy, by the inspection of our pathological cabinet, and by attending post mortem examinations. And finally, several of the physicians and surgeons on duty here are in the habit, at seasons in which the colleges are not in session, of delivering every year associated courses of lectures on most of the specialties of medicine and surgery, and of illustrating these lectures by models, drawings, and pathological preparations, as well as by frequent reference to cases under treatment in the wards.

Such, gentlemen, is the fare we have to offer you, and to such we bid you welcome.

In reflecting on the subject of practical education, it has occurred to me, that what we are apt to consider one of the greatest blessings of the present age—the general diffusion of knowledge—is not quite so great a blessing as it might be. For acquiring, as well as for imparting knowledge, we trust too much in books. Hence, though men are at present better read than formerly, it is questionable whether they are in the same proportion better educated.

Learning and education are by no means synonymous terms. By education is meant the development of the faculties, mental and physical, for exertion, for endurance, for observation, reflection, investigation, discovery and invention. By learning, is meant the acquisition of such knowledge as others have already been acquainted with. The difference between the two is immense, and should never be forgotten by those who are engaged in the business of instruction.

In the modes and degrees of learning, too, there are very essential distinctions. To learn to know, is one thing—too often thought the all-sufficient business of the learner. To learn to do, is a much more important, a much more difficult matter. This is the learning which books cannot teach. This is practical learning, and it is different, both in essence and degree, from the speculative knowledge obtained from the mere opinions or words of other men.

Abstract teaching cannot impart to us the knowledge of things. The utmost it can do, is to help us to imagine how perchance things may be. It is, therefore, to be commended to our attention, only when the things of which it treats are beyond our reach; or as the simple friend that supplies us with notes of introduction to those facts with which we are desirous of becoming intimately acquainted.

He who trusts to books, or to the opinions of others, for all that he knows, is as the blind man, who, by hearsay, has been taught to discourse most learnedly about the light of heaven, a thing with which he is nevertheless hopelessly unacquainted. Learned words, and conventional expressions, too often mask the most confused perceptions.

To the youth who is about to prepare himself for a profession, there are certain studies, which, in view of the shortness of human life, he may entirely overlook. There are others, which, for the same reason, demand of him nothing more than a speculative acquaintance. There are again others, having a greater claim upon his attention; yet not so essential as to demand of him more than a superficial practical knowledge. But those studies which are to prepare him for the business of his profession, and by which his course through life is to be characterized for good or bad, it would be worse than folly to pursue, only so far as they are to be learnt through books, or the teachings of others.

In regard to our own profession, it has been often and justly observed, that the student, in order to be fully prepared for it, has to acquire a much more extensive and varied stock of knowledge, than for any other pursuit. The acquisition of languages, the study of the exact sciences, of natural philosophy, of mental philosophy, of natural history in all its departments, and above all, the study of man, of man intellectual, moral and physical, of man in his social relations, man in his propensities, his passions, his habits and his follies, all of these have to precede, or to accompany the study of the various branches of medicine strictly so called.

And then these branches, how numerous, how diversified, how exacting of time and labor! Anatomy, the first of these, if followed through all its ramifications, descriptive, general, topographical, comparative, microscopic, philosophical, &c., is in itself the study of a lifetime; and when pursued only so far as to subserve the purposes of an accomplished practitioner, demanding a vast amount of application. Physiology, too, that offset of anatomy, well worthy of all the attention that has ever been bestowed upon it, is to be acquired only by the most patient and diligent application.

And after this, and closely associated with it, comes Pathology, marking with cautious eye the multifarious irregularities of vital action, and the innumerable agencies that give rise to these; the resisting and self-adjusting forces of the living frame; the yielding of the body beneath the burthen of disease or age; and the traces of disorder and dissolution, as detected in the several organs after death. Such is the study of Pa-

thology, a study sufficiently attractive, and sufficiently extensive, for the whole of your future years, and for acquiring even the elements of which, the years assigned to your course of preparatory studies are scarcely sufficient.

And now comes the most essential of all, the study of Therapeutics, the *modus medendi*. In pursuit of this, you have not only to familiarize yourselves with the various agencies that directly or indirectly influence the living body in enabling it to resist or overcome disease; you must also obtain an intimate knowledge of the times and circumstances under which these agents are most likely to operate with injury or advantage. In a word, you must learn not only how to bring into requisition the *materia medica* and *armamenta chirurgica*, but the whole of the details of medicine and surgery.

Numerous and diversified indeed are these branches of medical education! And though some of them are not to be so thoroughly pursued as others, it is still well to remember, that none of them are to be studied merely in the abstract. Into all of them you should be practically initiated, and with some of them you must be profoundly imbued. For, be it remembered, that medicine, strict medicine, is not so much an abstract science, as it is the application of certain general principles to practical details. And singular as it may seem, few circumstances have tended more directly to retard the progress of medical knowledge, than premature attempts on the part of writers and teachers to give to it a strictly scientific cast.

It was by such attempts, in ancient times, that the study of medicine was transferred from the temples of Esculapius, those early hospitals in which Hippocrates and his ancestors had acquired their knowledge of it, to the scholastic halls of Athens and Alexandria. It was by such attempts that, in the middle ages, the student withdrawn from the camp, the hospital, and the bedside, was immured in cloisters, or confined within the walls of Monastic Universities. It is this same effort that, in modern times, has mystified and confused the profession with a host of dreamy speculations under the specious name of systems of medical philosophy. And it is this same effort that, up to the present day, has aided the aspirant to while away his years of preparation in lecture-rooms, and in the study of books and opinions, instead of employing some portion of this time in the observation of facts, the exercise of his own faculties, and the development of his own resources.

The practice of medicine is an art, as strictly and as literally such, as the art of building, of printing, or of metal working; and the more our systems of education are made to conform to this view of the matter, provided the principles of this art are not in the meanwhile neglected, the better they will subserve the purposes of the profession. The joiner, the shipwright, and the smith, initiate their youth into the magic uses of the saw, the hammer, and the file; and they would laugh at the philosopher who should attempt to convince them that these youths, by studying the principle of mechanics, of the wheel-axle, of the lever, the screw, or the inclined plane, as taught in books and lecture-rooms, might be saved from the disagreeable necessity of plying their bones and muscles in the work-shop.

Like those engaged in the study of other pursuits, the student of medicine must be taught to exert his own powers; and before entering upon the responsible duties of his profession, he should be made to give

evidence of practical acquirement. For, without this, his principles will serve him to but sorry purpose at the bed-side. They may impart to him the semblance of knowledge; they may serve him in discourse; they may enable him to pass, even with some eclat, through the ordeal of a green-room examination. But unsupported and unenlivened by personal observation and experience, they must gradually escape him; or, in the long run, serve only to mislead him by the flattering, though false, conviction of being really master of all that he remembers.

In the year 1831, after devoting more than three years to preparatory studies, I entered upon my duties as one of the Junior Dressers of this Hospital, and in a day or two after my appointment, I was requested to take charge of a patient who had been seized with an obstinate vomiting. As yet unacquainted with practical details, I stood for some minutes at the bedside, revolving upon the remedy most likely to be of service in the case. While I was thus employed in thinking, one of my associates, whom I had no reason to look upon as my superior, suddenly entered the ward, and directed the nurse to apply a mustard plaster over the pit of the patient's stomach. I saw at once the propriety of the measure. I was struck with the promptitude of the prescriber. My self-esteem was, for a time, humbled; but the lesson, I believe, has not been lost upon me.

A couple of youths, fresh from their studies, were directed here, many years ago, to apply cupping-glasses to the temples of a negro woman. The cups were at first applied moderately heated; but not adhering, they were held over the lamp until nearly roasting hot, and then applied anew. Still they would not stick. The process was again and again repeated, all to no purpose. The poor woman roared, and the poor lads labored, until the Superintendent of the Hospital, attracted by the noise, at length relieved her from her tormentors,—archly observing to them as he entered the ward, that "they had better practise on each other until they had learned how."

Not long since, as is my frequent custom, I requested some of the young men accompanying me through the wards, to examine and report upon the nature of an inflammatory swelling. The first that came forward was, as I afterwards ascertained, one who had just passed the ordeal of his examination. He could detect nothing peculiar in the case. The second was a student of scarcely a year's standing, who had previously examined similar cases. He pronounced the swelling to be an abscess already in need of the lancet. I allowed him to apply this, and to the no small mortification of the other, he gave exit to a large collection of purulent matter.

The practice of our profession is made up of details like these, and a knowledge of these details, be assured, is never to be reached through lectures, or deduced from abstract principles. The physician or surgeon worthy of the name, is such, only so far as he is able to turn to advantage those innumerable and ever changing little circumstances of daily experience which language cannot teach. The senses of the student, as well as his intellectual faculties, require to be thoroughly and systematically indoctrinated. The study of principles may give employment to the mind, either in the closet or the class-room; but the hospital, and the bed-side, are the schools for the senses. I had almost said the only schools:—there are others

I remember to have heard an anatomical lecture, many years ago, at

the University of Glasgow. It was just after the period of the Burk excitement. The learned professor, in want of what is now fashionably called *Materiel*, was attempting to demonstrate the muscles of the human body, by means of wires drawn across the skeleton. The students of Scotland, in those days, saw but little of anatomy, and knew less of the use of the scalpel. The interruption there was but temporary. We, too, have had our Doctors' Mob. But as yet, our teachers have never been reduced to this whimsical expedient of the wires. Our students, however, for all the practical anatomy they are called upon to know, might as well have Burks among them always. A practical knowledge of anatomy should not be merely recommended.

The business of Medical Education has, I admit, within the past few years, been materially improved. But I may venture to affirm that it is destined, in this country, to undergo still more important alterations for the better, before it meets the full and reasonable demands of this jealous, exacting and enlightened age.

The course of education in our well appointed colleges—and especially in the rival schools of this city (rivals be it ever hoped only in their ability for usefulness)—is every year becoming more and more elevated. The time, I trust, will soon come when these useful institutions may rise above the obstacles that still prevent them from placing their curriculum of study on a level with that of the most reputable schools of Europe.

And let it not be said (for the charge is a libel on the people of this nation) that we are not prepared for such a system. Are our people less intelligent than those of other nations? Are they less abundantly supplied with the conveniences, the comforts, or even the luxuries of life? Are they less disposed to patronize talent and acquirement? I speak not of the residents of our larger cities, I speak of our people as a nation. Gentlemen, the medical institution which first comes up to the reasonable demands of the profession in this respect, and possessing the facilities, requires of its graduates practical acquirements equal to those at present enjoined upon the students of European schools, will find its interest in the measure. We hear, in all quarters, loud and lamentable outcries against the reign of quackery and imposture. But the rifest and rankest quackery of this land, is the quackery of half-educated graduates in medicine.

But I have said that the standard of medical education has of late years been rapidly advancing here. Let us inquire in what respect; and see what remains to be effected. Numbers and noise indicate nothing but commotion. Let us look for the indications of progress.

In the first place, then, our youth, prior to commencing their professional studies, are better instructed in the elements of general knowledge than formerly. Although not required to have obtained a classical education, the great mass of them at present are more or less acquainted with the classics. Those resident in this city, are nearly all graduates in letters. Judging from those that I have had charge of as private pupils, for the last ten years, I should say that nine-tenths of them had received a liberal elementary education.

This fact, of itself, speaks much in favor of fixing upon an elevated standard of preliminary acquirement; and of excluding from the matriculation-book all applicants whose habits of life, or whose want of preliminary education, is such as to disqualify them from engaging in the profession.

In the second place, as evidence of progress for the better, although the regularly prescribed time for public teaching is still confined to four months; yet by extra and accessory courses, the annual term of public teaching in this city has, in effect, been extended of late years to between seven and eight months. And during the recess, the opportunities for practical improvement are, in some respects, greater than during the winter term.

With a lengthened regular term, and with fewer public lectures daily, the students from a distance who have not the means of passing all their time in the city, would have some few hours every day to devote to the Hospital, the Dissecting Room, the Laboratory, the Cabinets of Materia Medica, of Pathological and Comparative Anatomy, and of Natural History,—not to speak of necessary time for meals, and no less necessary time for recreation—

> Neque semper arcum
> Tendit Apollo.

In the next place, as evidence of progress, the branches of medical education that have always been considered essential, are at present taught more efficiently than formerly.

As to anatomy, it is true, dissections have as yet never been enjoined. But the students, in this respect, are in advance of the requirements of the schools. The public dissecting-rooms are tolerably well occupied; and private dissecting-rooms have been well supported. The principal improvements in reference to anatomy are, the rise of private schools for dissection, the practical spirit of most of the students, and the greater attention now paid to surgical anatomy.

The subject of Materia Medica, as far as it can be taught by lectures and class-room demonstrations, is at present well managed. The student, however, might, with advantage, be called upon to familiarize himself still farther with medicines, by frequent inspection of the articles in their various forms and stages of preparation. He should be somewhat further instructed in practical botany, and be able to point out our indigenous medicinal plants. In a word, he should be so taught as to be at no loss, whether in the field, the pharmacy, or the warehouse, to select such articles as he may be in need of. I put it to my fellow-practitioners: Who of them can do this? Or who, when asked by some anxious mother to examine the medicine of his own prescribing, has not often had occasion to cross himself, and exclaim, "God help me, I am ignorant of all this!"

Our courses of chemistry are sufficiently full and admirably illustrated; and of late much attention has been paid to the analysis of organic substances. The practitioner of the present day, in view of the multitude of other investigations that have a more direct claim upon his attention, is not usually required to be a proficient in chemical manipulations. But even in this branch, what is learnt should be learnt in a practical manner. The pupil, with test-glass in hand, should know how to manipulate for himself. This mode of teaching has begun, and should become more general.

No part of medicine has been taught with greater zeal in this city than midwifery. It is the fault of the student if he is not a proficient in this before receiving his degree. Midwifery with us is, indeed, one of the foremost branches of the profession. And while that superci-

lious body, the College of Surgeons of London, has been refusing to hold communion with obstetricians, the hero of the vectis on this side of the water has been marching in the foremost ranks of professional preferment.

Two hundred years ago—and there was no such thing as an obstetrician! Those ancient matrons, the midwives, even until long within that period, had it all to themselves! But now, throughout the length and breadth of this land, I know of no such thing as a reputable midwife.

Obstetrics, as a distinct branch of our profession, was unknown until Louis XIV., the great patron of this as of other of the fine arts, first brought it into vogue, by commending it to the ladies of his court. And not long ere this, a certain Dr. Veit of the city of Hamburg, was actually brought to the stake, and roasted alive, like any other pagan, for having, under the disguise of quoif and petticoats, simply attended the mysteries of the lying-in service, and assisted in the cry of—*Age, Lucina!*

Imagine, for a moment, this illustrious martyr in the cause of midwifery still before you. What a subject for the chisel or the pencil! How worthy of embodiment by some able hand among the distinguished members of our American Art-Union! We have seen the walls of college-halls illuminated in fresco or in oil, with Democritus at his anatomical investigations, Hippocrates rejecting the bribes of the Persians, Socrates in the act of swallowing his hemlock-draught; and we might fancy, for the same purpose, Seneca submissively invoking death, by opening his own veins; Desgenettes spurning the orders of Napoleon with the heroic reply that his office was to save life, not to take it; or Larrey, transferred in safety from shoulder to shoulder over the falling bridge of Berezina, by a grateful soldiery, amid the horrors of surrounding slaughter. But, gentlemen, there is not one of all these noble themes so worthy of selection for adorning the halls of our colleges, as the history of this martyr of Hamburg.

We have indeed but very few martyrs for gracing the annals of medicine. So far as I can at this moment call to mind, I know of not another. For, Servetus had been dabbling in theology, and was burnt on that account, rather than for his alleged discovery of the circulation of the blood. Let us then cherish the memory of this unfortunate German. And should the saucy fellows of the College of Surgeons ever again turn up their noses, or attempt to twit our worthy obstetricians, may the latter hold up to them this glorious example of devotion to their cause, and exultingly demand of them anything to compare with it.

Truly, midwifery is a great subject, and in high consideration here. And yet even here all are not aware of this. I have heard of Americans leaving their own schools, for the sole purpose of investigating some of the specialities of this department on the other side of the Atlantic. This, by way of episode. Let us now return to our inquiry.

Last in order come the principles of Medicine and of Surgery. In these two great departments of medical education, our colleges are fully up to all the improvements of the day; and in connection with the usual teaching of principles, they have made a strenuous, and in the sight of many a successful effort to introduce practical teaching also. For this latter purpose a series of dispensary services has been instituted, which has added much to their popularity, and has, no doubt, in some respects, increased their efficiency for useful instruction.

The introduction of dispensary services constitutes the latest feature in the character of the medical schools of this country. And as these dispensaries have for a year or two past been the subject of much general remark, I beg leave to say a word or two in regard to them before proceeding further.

By clinical teaching, or simply *clinique*, is properly meant, practical teaching, in connection with observation at the bed-side. Instruction of this sort, says M. Raige Delorme, having for its *object* the detection and recognition of disease, the tracing of prognoses, and the considerations of treatment; and having for its *text* actual disease, as witnessed in individual examples; can only well have place at the bed-side.

It might be superfluous, says he, to point out in detail the requisite and necessary conditions for a proper clinique. They may be summed up as follows:

1st. A sufficient number of cases for teaching, and for study; which should be so brought forward as not to dissipate the attention of the student; and so studied, examined, and discussed, as to be thoroughly understood.

2d. Convenient apartments for examining and treating patients.

3d. Special apartments for holding conferences, for consultations, and for surgical operations.

4th. A room for prosecuting post-mortem inspections, and all the means proper for facilitating anatomico-pathological research.

The study of medicine and surgery by such men, observes this excellent writer, should constitute the completion of every medical education. For, says he, it is at the bed-side of the patient that the pupil is enabled to search for the proof of the theories, and where he begins to apply the general rules, which have been imparted to him elsewhere. Deprived of clinical instruction, other learning the most solid and extensive, will only serve to demonstrate to him the difficulties of an art, which, like all others, is only to be acquired by the study of examples.

Now, I need not say, gentlemen, that these requests, and these aims, are not and cannot be fulfilled by dispensary exhibitions. Still, to dispensary service, when confined to the management of such affections as legitimately belong to it, there is no direct objection. The student may in this way be made familiar with much that is of interest to him. He should be cautious, however, not to place his main reliance for the practical study of disease, upon the opportunities he may chance to enjoy in this way. College Dispensaries should never be held up as sufficient to supply the place of Hospitals. And if thus held up, I most sincerely believe, in common with many of your professors, and with the great body of practitioners here and elsewhere, that they must do much indirect mischief to the cause of sound practical instruction, by withdrawing the student from the only places in which such instruction can be properly imparted.

The college *cliniques*, as they are now called, were first started in a neighboring city, where hospital privileges had been so much restricted as to be of little service to the winter students. As an expedient for supplying this deficiency, they were unquestionably acceptable, on the same principle that half a loaf is better than no bread. They were at first called by their true name; but this attracting little notice, was soon altered. The example thus set, and the title then assumed, were copied

by the schools of other places. In the country institutions, these dispensaries have been of real service; and in conducting them, these schools have placed themselves fully on a level with those of the larger cities.

It is somewhat remarkable, however, that, in this city, where hospital privileges are ample and almost unlimited, these exhibitions soon became so popular, as, for a time, to have entirely supplanted clinical instruction. There were probably between six and seven hundred medical students in this city during the last winter. I was on duty in the second surgical department of this hospital, during the greater part of that time, and strange to say, it was a rare thing to see the face of a single student in any of my wards during the whole of my attendance.

I shall not attempt to notice the several unsatisfactory reasons that have been assigned for this state of things, reasons which scarcely serve to shield the only true and sufficient one. The *clinique epidemic* of the colleges, as my friend Dr. Bell has happily expressed it, was last winter at its height. The students, one and all, were affected by it, and the Hospitals were forsaken.

It is to be presumed that, ere this, the disease has materially abated. Such, I am told, is the fact in Philadelphia, where it first broke out. The University of Pennsylvania, and some of the other schools there, have already abandoned their dispensaries, and are now supplying their second course students with Hospital Tickets, at their own expense. And if hospital attendance there is beyond measure superior to their misnamed *cliniques*, what are we to think of the facilities for practical instruction enjoyed by students within the walls of the New York Hospital!

Gentlemen, if I know my own mind, I have no disposition to draw invidious comparisons; or to speak of the relative advantages of rival cities or of rival institutions. I should rejoice to see a well endowed hospital connected with each of our flourishing and useful colleges, in which the students might have ample instruction in the practice of the profession, from their own teachers. But until such hospitals can be provided, it is both interest and policy on the part of these schools, as well as on the part of the students, to turn to as much account as possible the clinical teachings of this Hospital.

This has never yet been done. I fear the disposition to do it has not always been sufficiently manifested. I have heard it announced amidst an assembled multitude of young men from every quarter of the United States, that the New York Hospital is badly managed; and that the students of this city are, or rather were, to have access to a much better institution. The time may come for the fulfilment of this promise. But, in the meanwhile, we may have an opportunity of saying a few words in our own defence. We will begin this, with a summary view of the rise and progress of clinical teaching.

In early times, when the practice of medicine constituted a portion of the mysteries of heathen mythology, it was doubtless taught, as other callings still are, by examples. In the circuit of the private preceptor, and in the wards of infirmaries, it has ever since, to some extent, been taught in the same way. But in Universities and other scholastic institutions, from their origin, soon after the decline of Arabic learning, until towards the commencement of the present century, practical education in medicine appears to have been entirely overlooked.

The attention of the profession in regard to this important business, was awakened by slow and almost imperceptible degrees. At the present time it is somewhat difficult to fix upon the individual to whom the honor of originating it shall be definitively awarded. In several of the great schools of Europe, much attention had been given to clinical instruction prior to the commencement of the present century. But as an essential part of education, it is among the innovations of the present age,—and in this country, as yet, it is only beginning to receive that degree of attention to which it is justly entitled.

Although some earlier attempts at this mode of teaching may have been made at Padua, at Utrecht, and elsewhere; yet to Francis de le Baë, better known under the name of Sylvius, who filled the chair of Practical Medicine in the University of Leyden, from 1658 to 1672, we are probably indebted for the first well marked effort at combining clinical with theoretical instruction. But the celebrated Boerhaave, who afterwards occupied the same chair in that University, in the early part of the last century, gave to this mode of teaching the impetus which has continued to influence it for the better ever since.

The example of the great school of Holland was followed, about the middle of the last century, by the University of Edinburgh; where the name of Cullen is associated with the earliest attempt at clinical teaching in Great Britain. At the University of Vienna, about the same time, the same system was introduced by Van-Swieten, De Haën, and Stöll. It was not fully adopted at the school of Medicine at Paris, until the period of its re-organization in 1795; when under the charge of Corvisart, Pinel, and Desault, it became an essential portion of medical education. And there it has ever since been cultivated with unparalleled ardor and success, by a galaxy of brilliant men; who, mainly through the influence of their practical teaching in the hospitals, have raised the school with which they are connected to be by far the greatest of the present age.

At London and Dublin the introduction of this mode of teaching appears to have been of later date. Sir Astley Cooper, in commencing his career, was unacquainted with it, and began to lecture on Surgery, as he himself had probably been taught by Hunter and others, without the accompaniment of practical illustrations. He was not, however, long in discovering the signs of the times. And to the force of his bright example at Guy's and St. Thomas's, more perhaps than to that of any other individual, the people of Great Britain and Ireland owe the remarkable revolution that has already been effected there in the whole system of medical education.

At this moment there is scarcely a hospital of any magnitude or importance in England or Ireland, that has not associated with it a well-organized medical school. In these institutions clinical teaching constitutes, as it should ever do, the most essential portion of medical education. The schools there are no longer independent establishments. They have become appendages to the hospitals.

The founders of the earliest schools in America had mostly received their professional education at Edinburgh. The organization of our own schools was accordingly much after the pattern of that once renowned and still popular institution.

Among the first efforts on the part of the projectors of the medical department of the Edinburgh University, was one for establishing an In-

firmary. In consequence of their exertions the Royal Infirmary of that city was founded in 1738, and was soon afterwards in a condition for the reception of patients. Here Cullen, prior to 1756, the year of his appointment to the chair of Medicine in the University, had already begun his clinical lectures, attracting to his wards young men from every part of the civilized world, and building up a school to be for many years the first in magnitude, as it was first in the talents of its teachers.

As at Edinburgh, so in this country, and particularly in this city—one of the first efforts on the part of the projectors of the medical school connected with King's, or, as it is now called, Columbia College, was for establishing the New York Hospital.

In the year 1769, through the exertions of Dr. Baird, Middleton, and Jones, professors in our first school of medicine, aided by some of the most public-spirited of their fellow citizens, a subscription for this object was undertaken. The Society of the New York Hospital was organized and chartered, in 1771; and in 1773, was laid the foundation of the building which we are at this moment occupying. But interrupted by a conflagration, and by the subsequent events of the Revolution, this house was not in a condition for the reception of patients until the 3d of January, 1791. Ever since that period the Governors of the Hospital have been enlarging its accommodations, and extending its sphere of usefulness, in pace with their pecuniary resources, and the increasing necessities of this growing city.

It is not my purpose on the present occasion to trace the general movements of practical education beyond our own borders. I have not again to speak of it except so far as it has been connected with this Hospital. Here, and up to the opening of the college dispensaries, here only, have the students of medicine in this city been taught to look for it.

The Society whose charitable purposes have been so admirably carried out in establishing this Hospital, and which, through a Board of twenty-six Governors, has still the ultimate control of it, is composed of some of the most influential, enlightened, and benevolent of our fellow citizens.

The Board of Governors have the immediate charge of all that relates to the Hospital proper, as well as to the Lunatic Asylum at Bloomingdale, which is a part of the same institution. They have the appointment of all the officers, medical as well as others. They have the management of the finances, and the care of the property. And through their several committees, they supervise the reception and discharge of patients, the internal economy of the several departments, and the comfort and accommodation of the inmates. In a word, they exercise the most watchful and scrutinising supervision over all that concerns the prosperity of the Institution, and the purposes for which it was originally founded.

The funds of the Hospital are derived in part from a State annuity, in part from the general government of the United States for the board of a hundred seamen, and in small part from pay patients. The Governors, the attending Physicians and Surgeons, and their assistants, receive no remuneration either directly or indirectly for their services. And with the exception of a few salaries to the superintendent, clerk, nurses, and servants, the whole of the moneys accruing to the institution, are appropriated to the support and maintenance of the sick.

The three principal Buildings of the Hospital proper, can at present accommodate about 390 patients. The average number for the year past has not fallen far short of 300. The forms of disease under treatment are as multifarious as the characters and habits of our heterogeneous populace, collected as they are from all quarters, and almost every nation of the globe. The cases are for the most part acute and severe. The only diseases expressly excluded, and for which accommodation is elsewhere provided, are the contagious and eruptive fevers.

The institution is under the professional care of four physicians and six surgeons, who arrange their respective terms of attendance so as to have one physician and two surgeons continually on duty. The patients are grouped into three services or divisions; one Medical and two Surgical Divisions.

The Medical Division, including rather more than one third of all the patients, occupies the whole of the new or North House, and two wards in the north wing of the central or Main Building. The First Surgical Division occupies all the wards of the Main Building excepting two in the north wing. The Second Surgical Division occupies the whole of the south, or as it was formerly called, the Marine House.

To each of these Divisions are attached a House Physician, or House Surgeon, and two Assistants. These junior officers receive their appointment at the nomination of the Attending Physicians and Surgeons, to whom they are directly responsible. They serve by gradation, for three years. During the first year, in the capacity of Junior Assistant, they accompany the Attending Physician or Surgeon in his daily visits, they attend to cupping, leeching, the administering of baths, and the application of galvanism; they have their share in dressing and bandaging; and they transcribe into the case-book the history of every case in their respective divisions. During the second year, in the capacity of Senior Assistant, besides attending to a portion of their former duties, they draw up the minutes of all the cases, they perform venesections, they make the autopsic examinations, and they visit patients throughout the town who apply for admission, with the view of determining whether such applicants are proper objects for the charity of the hospital. The Senior Assistant must be a graduate in medicine, he is occasionally called upon to perform the duties of the Resident in the absence of the latter. During the third year, in the capacity of House Surgeon or House Physician, they reside in the Hospital, and are only allowed to be absent by express permission. They have now to carry into effect the directions of the Attending Physician or Surgeon, to supervise the registry of cases, to keep a record of all the admissions and discharges; to visit the wards of their respective divisions at least every morning and evening. They are present at all consultations, and are allowed to prescribe for emergent cases, and for others, at the discretion of the Attending Physician or Surgeon, to whom they are always responsible.

By this well ordered and most thorough training, the young men who pass through these gradations of duty, are at once prepared to take high rank as accomplished and experienced physicians.

I need not speak of the Attending Physicians and Surgeons individually. With most of these the students, during the coming winter, will have abundant opportunity of becoming more or less acquainted.

Associated with the Hospital, we have also a consulting Physician, and two Consulting Surgeons. These appointments are honorary; and

are given in acknowledgment of the former valuable and long continued services of those who held them.

And here, fondly would I dwell for a few moments, did time permit, to recount the labors and triumphs of these honored gentlemen, now among the fathers of the profession. But their deeds are already known, not soon to be forgotten. Long may they continue to enjoy their well-earned, and far-spread reputation.

"Urit enim fulgore suo, qui prægravat artes
Infra se positas: extinctus amabitur idem."

There are also other names connected with the history of this Hospital, no less worthy of the passing tribute; and among them, some, for ever associated with the history of medical sciences. The youth who now hears of them perhaps for the first time, may have in future years sufficient reason for remembering the names of Bard, of Middleton, of John Jones, of Elihu H. Smith, of Edward Miller, of Watts, of Mitchell, and of Hosack, among our former physicians; or of Richard Bayley, Borrowe, Seaman, Kissam, and Post, among our former Surgeons. The odor of these names is still fresh among us. Here may it survive, to be transmitted, with increase of admiration, to our successors!

We now come to the business of Hospital Instruction.

The main object of the founders of this Hospital was, doubtless, the commendable one of relieving the suffering and afflicted. But the mode of its origin, the character of the institution after which it was modelled, and the custom of its medical officers from the commencement, leave no room to doubt, that foremost among the incidental benefits expected from it, was the means of affording practical education in medicine and Surgery.

Under this conviction it has ever been the practice of the Physicians and Surgeons on duty here to allow the students to accompany them through the wards, to explain the cases, and to give brief and unstudied, though practical, and highly useful expositions of disease, at the bed-side. This long continued custom has been attended with many beneficial results. And there are at this moment practitioners in every part of the Union, who can look back upon the familiar and unceremonious lessons thus listened to, with the liveliest recollections; and with the full conviction of having derived greater benefit from them, than from all the abstract discourses on the theory of medicine they have ever heard.

These useful and informal bed-side discourses, gentlemen, are still continued. They will occupy much of your attention here throughout the coming winter. The time may come when you will have reason to remember them with as much satisfaction, as do now those who are your seniors and your instructors.

In order more fully to benefit the students of this city, as well as for the advantage of the profession generally, an effort was made, about four years after the opening of the Hospital, to establish a Medical Library in connection with it. The funds derived from the sale of hospital tickets to the students were appropriated to this purpose. The library, from its commencement in 1796, has been supported almost exclusively in this way. At present it contains nearly six thousand volumes of the choicest and most costly works of medical literature, both ancient and modern; and it is continually increasing. To the student the privilege of using and consulting these works, in connection with his practical studies here, can

never be too highly estimated. It may be well to know that there is not a hospital either in France, Great Britain, Ireland, and so far as I know, in any other part of Europe, that contains a library fit to be compared with ours.

Prior to 1811, I am not aware that any attempt had ever been made to introduce here a course of teaching, more complete than that of which I have already spoken. About this period Dr. Edward Miller, in association with Dr. Seaman, attempted to institute a system of clinical lecturing in the Hospital Theatre; Dr. Miller, with this view, commencing on Clinical Medicine, and Dr. Seaman, on Clinical Surgery. But the death of Dr. Miller, which occurred in 1812, arrested this commendable undertaking.

Several of the attendants here, in their connection with the colleges, have at different times since the first opening of the Hospital, enjoyed the nominal office of Clinical Professors. But their mode of instruction here has always been the same as that of their colleagues. The students have never been required to attend them, or indeed to attend to Hospital teaching at all. As a means, however, of inducing them to seek for practical instruction, the custom was introduced of granting to each hospital student at the end of the winter session, an engraved certificate signed by each of the Attending Physicians and Surgeons. This custom was followed up for many years; and tended, as much as any other circumstance, to increase the sale of hospital tickets.

These certificates were adorned with a copper-plate engraving of the Hospital Buildings. They may still be occasionally seen, framed and suspended in the office of city, as well as country practitioners, exhibiting the names of Hammersley, Hosack, Mitchell, Post, Cock, Mott, Stevens, and others, as vouchers for the practical acquirements of the possessor. The custom of calling for these testimonials has, within a few years past, been entirely neglected. Why, I know not. The students are as much entitled to them now, as they ever were. And the opportunities which they now enjoy here, should give them a far better right to make use of them.

From 1812, up to the period at which I first became acquainted with this Institution, I am not aware of any further attempt to extend the sphere of teaching here. In the year 1827, I remember to have heard a series of three lectures in the Theatre, from the late Dr. Watts, on the subject of Hemorrhages. With the exception of these, I can refer to no others delivered here, until Dr. Stevens, about the year 1837 or '38, began to give an occasional practical discourse. These lectures he pursued, at intervals, up to the period of his resignation in 1839. They were received with marked satisfaction. Most of those who heard them can now look back to his discourses "On the Treatment of Patients immediately after the Receipt of Severe Injuries," "On Lithotomy," "On Ulcers," "On Hemorrhoidal Affections," "On Venereal Diseases," "On the Extirpation of Tumors," and a few other topics, as the harbingers of a brighter era.

After what has now been stated, it may ill become me to speak of more recent improvements. I may, however, be permitted to say, that soon after my appointment here, I had the honor of submitting to my colleagues a series of propositions, recommending, among other things, the formation of a pathological cabinet; the erection of a convenient building for post-mortem examinations, to which students might have

access; and a regular mode of registry for all the hospital cases. These propositions were warmly accepted and seconded by my colleagues. They were, in due time, submitted to the Board of Governors; and before the end of the year they were successfully carried into effect.

In the spring of 1840, that following my appointment, I commenced a special course of Lectures on Surgical Pathology, illustrating most of them by hospital cases. These were soon followed by other special courses from my colleagues; and by a more thorough system of Clinical Lecturing in the Theatre. These distinct courses have since resulted in our associated and extensive Spring Lectures; which are given every season, immediately after the close of the college sessions.

To sum up, then, we have only to repeat the bill of fare with which we first set out. Until recently, the privileges of the student in attendance here, were, 1st, the opportunity of visiting the wards, of examining the cases for themselves, and of listening to the practical remarks of the attending Physician and Surgeon. 2d, the use of the library. 3d, the opportunity of witnessing surgical operations in the Theatre. In connection with these, they have now the privilege of consulting our Hospital case books. They have access to our Pathological Cabinet, a collection of the greatest value to the student. They have, in the next place, convenient rooms, well supplied with all the appurtenances proper for post-mortem examinations. The hour for making which, throughout the year, being regularly at 11 o'clock, allows to all who are so disposed, the opportunity of witnessing them. Furthermore, they have now, full expositions of all severe or difficult surgical operations. They have, every year, Clinical Lectures, in course, on Medicine and Surgery. And lastly, they have access to our Associated Lectures on Several of the important Specialties of Medicine and Surgery; among which may be specified, Topographical and Morbid Anatomy, Dressing and Bandaging, Ophthalmic and Aural Surgery, Surgical Pathology, Thoracic Affections, Diseases of the Nervous System, with practical teaching in Chemical Analysis. And for these privileges, which in any of the schools of Great Britain would cost them more than two hundred dollars a year, privileges which they could not enjoy in any single hospital in Paris,—and which neither love nor money could purchase for them elsewhere in this country, they are called upon to pay—I almost blush to name it, the amount of eight dollars annually!

Gentlemen, the means of practical instruction at present at our disposal are all brought into requisition. Our system is nearly complete. By extending our Spring Lectures; by employing our Apothecary's Department for teaching the materia medica and pharmacy, and our open grounds for a botanic garden; by distributing external patients among the students, and establishing dissecting rooms somewhere in the neighborhood; a course of education might be made more thorough here, than in any other institution in America. These remaining resources may, perhaps, some day be brought within our reach. In the meantime, gentlemen, you cannot do better than turn what is already provided for you, to someuseful account.

You may, in other countries, find larger hospitals; but none presenting a greater variety of acute and important diseases. You may find in other hospitals, abler teachers; but none so willing as we have been to give you our time and services for nothing. You may find, in some few other institutions, greater opportunities for autopsic examinations;

you may find, in the cabinets of foreign societies, more valuable pathological collections; you may, in other cities, even find larger libraries than ours. But look for all of these together in any other hospital either at home or abroad,—and you will look for them in vain. I say it without fear of contradiction, you will not find a single hospital to compare with this,—not one that contains within itself so many advantages for both theoretical and practical study as this New York Hospital.

A word or two more in conclusion.—During the coming winter, it will be well for every medical student here, but more particularly for such as are not prepared to remain in town after the close of the college session, to visit the hospital daily. Let nothing prevent you from attending at the hour set apart for the purpose.

Come not merely with your ears open, as students often do. Come not to gaze about the wards with idle curiosity. But rather, come like philosophers, with all your faculties awake, for examining, comparing, judging, and thinking for yourselves; and working, too, for yourselves, at every opportunity.

Pick out your own cases, and study these, and note these for yourselves. Do not attempt to listen to all that is said with the view of remembering it:—but listen well to what is said of the cases on your own list, and see if it be true. Attempt not too much.

Do not fall into the puerile fondness of hunting after strange sights, rare diseases, and great cases. The dressing of an ulcer, the setting of a bone, the treatment of a pleurisy, pneumonia, or fever,—these, and such as these, should be your study here. Striking cases you may look at; but the business that should fix your attention, is that which best prepares you for the daily business of the profession.

Finally, avoid that morbid appetite for surgical operations, so long magnified and so much over-rated. Surgery is a good thing, a useful, an excellent thing in its way; but too much of it is a great evil. And the sooner you find out this for yourselves, the better for your patients.

ART. II.—*A Case of Empyema, in which the operation for Paracentesis Thoracis failed from a cause not generally noticed.* By JOHN A. SWETT, M. D., Physician to the New York Hospital.

IT has happened to me to assist at, or to perform the operation for empyema seven times during the last eight years, and no difficulty has occurred to the easy and successful evacuation of the purulent matter until the present year. During this time, two cases have occurred to me in which no discharge of matter followed the operation, notwithstanding undoubted evidences of its existence were apparent to several intelligent physicians, as well as to myself. Both these cases terminated fatally. In one, the cause of failure appeared clear on post mortem examination; in the second case no post mortem examination was made, so that the cause of failure is at best conjectural.

A single gentleman aged about thirty-two years, with a strong family predisposition to tubercles, was attacked with hemoptysis about ten

years ago, while pursuing his medical studies in Philadelphia. He soon, however, recovered his usual health, which was rather delicate, principally from the existence of dyspeptic symptoms, and continued to pursue his usual business, which was that of a clerk, until last autumn. He was then attacked by severe pain in the right side of the chest, cough, dyspnœa, and by other symptoms which were probably dependent upon an acute pleurisy. He, however, recovered his usual health, the cough, dyspnœa and pain in the side entirely leaving him, so that he could walk from his residence to his place of business, the distance of a mile and a half, during the coldest weather of the past winter, and with the greatest ease and comfort. Early in February, however, of the present year, the pain in the right side gradually returned with the cough and dyspnœa, and he complained of feeling feeble and unwell, although he continued to pursue his usual avocations at this time—he was attended by a physician of this city, who supposed that he was suffering from an affection of the liver. About the first of March, he was examined for the first time, by Dr. McClellan of Brooklyn, who found him much enfeebled, with a weak, rapid pulse, and with the physical signs of extensive effusion into the cavity of the right pleura. He was treated by a mild mercurial course, the gums being kept slightly sore for ten days, and by counter-irritation to the chest. Afterwards, tonic remedies were used, but they were soon abandoned, as they did not appear to agree with the digestive organs. In time, hectic symptoms appeared, while the gradual failure of the vital powers continued, as also the physical signs of the pleuritic effusion.

I examined the patient, for the first time, on the 25th of April last, nearly two months after his attack. He was then sitting up, his face pale and œdematous, somewhat emaciated, and with considerable loss of strength. His pulse was 116, and feeble—his respiration oppressed, with the ability to lie on either side, but with a preference for the affected side or the back. His cough was moderate, with a trifling transparent mucous expectoration. The appetite was indifferent and capricious, the stomach easily disturbed, the tongue red at the tip, and with enlarged papillæ—a slight tendency to diarrhœa existed.

On examining the chest, the right side evidently moved less freely than the left during respiration; it was universally dilated; it was œdematous, and outside the nipple there was a circumscribed bulging with tenderness on pressure, but without fluctuation. This side of the chest was also universally very dull on percussion. Anteriorly and posteriorly, over the upper third of the lung, a distinct bronchial respiration could be heard, also along the spine quite to the base of the lung—over the remaining portions of this lung, below the third rib in front, and laterally and posteriorly from the same level, all respirating sounds were entirely absent. Egophony existed over the middle portion of the side. The heart was considerably displaced to the left side, and the liver descended below the false ribs. Over the left side of the chest the percussion was clear, and the respiration pure and natural.

The condition of the patient, as well as the previous history of the case, convinced me, as it had already convinced Dr. McClellan, that a copious effusion of pus existed in the right pleural cavity. I hesitated as to the propriety of performing the operation for empyema, notwithstanding the favorable opinion of Dr. McClellan, because the strong family predisposition to tubercles, the occurrence of hemoptysis several

years before; and finally the existence of a bronchial respiration at the summit of the lung, induced me strongly to suspect that the lung was already the seat of a tuberculous deposit, and therefore, that an operation could be productive of but little benefit. The patient being disposed to leave the decision of the question entirely to us, Dr. Hoffman, of this city, was called in consultation; after a careful examination of the case, he was of the opinion that the operation for empyema should be performed. It was immediately performed (May 3d) by Dr. McClellan, in the usual place, laterally between the fifth and sixth ribs. The integuments were first divided by a scalpel; and a flattened canula, with a lancet shaped trochar, made for the purpose of penetrating the chest, was introduced. To our great surprise, no matter followed the removal of the trochar. A probe introduced to a considerable depth, much beyond the depth of the pleura costalis, came in contact with a solid substance, but still no pus flowed. We had observed, during the operation, after the division of the superficial parts, and which the existence of œdema prevented us from ascertaining before, that the intercostal space was not at all widened—that fluctuation was entirely wanting; and formed the opinion that an old adhesion had probably united the lung to the ribs at the place where the trochar was introduced.

The wound, kept from closing for some time, by the introduction of lint, with the hope that pus might at length find its way into it—at length healed. The patient, although well supported by proper means, gradually failed. Two new symptoms were noticed—the pulse became more feeble at the right than at the left wrist, and the patient complained of a severe oppressive dragging pain above the spine of the right scapula on rising, which was relieved at once by the recumbent position. The œdema of the chest also increased very much, and produced great deformity, by forming two large tumors, one anteriorly about the superior portion of the chest, the second, posteriorly about the base of the chest, but without fluctuation or other evidence of the pointing of matter. The feet were also noticed to be slightly œdematous.

The failure of the operation had, of course, thrown a good deal of doubt on the diagnosis of the case. The patient, therefore, proposed that Dr. Beales, of this city, should be called in consultation. After examining the case, Dr. Beales expressed the opinion that it was probably a malignant or cancerous disease of the chest. The same idea had already entered my mind, especially from the recollection of the cases detailed by Dr. Stokes of Dublin, as well as of one I had myself attended, and which is published in the number of this Journal for July, 1845. In this case, the symptoms of pleuritic effusion appeared so marked, that tapping the chest had been seriously considered, while the true nature of the case, a large cancerous tumor, was only revealed by post mortem examination.

With these views of the case, it was of course thought advisable to do nothing beyond making the patient as comfortable as possible. On the 4th day after the consultation, June 16th, pointing occurred at the very spot where the incision had been made; a spontaneous opening took place, and a large quantity of purulent matter was discharged. The patient was somewhat relieved; the breathing became less oppressed, and the distressing dragging sensation at the top of the right shoulder, entirely disappeared. But the patient gradually sank, and died on the 23d of July.

Post mortem examination, 12 hours after death.—The right side of the chest was still somewhat dilated; the œdema had entirely disappeared, except at the lower extremities. The external opening into the right pleura continued. This cavity contained a quantity of fetid gas, and about one quart of pus healthy in appearance, but of a very nauseous odor. The whole pleura was covered by a thick false membrane of variable firmness, and detached without difficulty from the parts beneath. The pleura itself was somewhat thickened and opake. The lung adhered to the diaphragm by old adhesions; also at the summit of the chest, anteriorly as low as the third rib, and posteriorly to the same extent. Laterally, where the operation had been attempted, *there were no adhesions uniting the lung to the pleura costalis*, but only a false membrane, somewhat friable in its texture, and adhering with moderate firmness to the pleura costalis. The right lung considerably compressed, exhibited no evidence of disease, except two small aborted tubercles at the summit. The left pleural cavity was healthy, except from the existence of some old adhesions at the summit. The left lung contained, at its summit, some old cutaceous tubercles and a cicatrix. Numerous minute, semi-transparent miliary tubercles, apparently of very recent formation, were scattered throughout this lung. The heart was natural. A few tubercles were also noticed under the peritoneum. The liver was closely united to the diaphragm by old adhesions; its structure appeared to be natural.

The cause of failure in evacuating the pus, in the above case, was not a mistake in the diagnosis of the disease, but unquestionably, I think, a *false membrane lining the pleura costalis, and so loosely attached to it, as to be pushed before the point of the instrument*, so that the cavity containing the pus was not entered at all. I was not aware that any writer on the diseases of the heart had alluded to this as a cause of failure of the operation, until Dr. Hoffman directed my attention to Dr. Watson of London, who, in his lectures recently published, states on the authority of Dr. Davies, that the operator should be careful to use a sharp instrument, otherwise the accident of pushing the false membrane before its point might occur. But no cases are referred to in which this accident actually occurred, neither is it stated that it has ever happened. That the dullness of the point of the instrument may be an occasional cause of this accident, is, perhaps, partially true in the above case; for in another case which occurred in the practice of Dr. Hyslop, and whom I assisted in consultation, the same instrument was used, and for the moment with the same ill success, notwithstanding that distinct fluctuation existed at the point where the trochar was introduced. The delay of the pus was, however, only momentary; the introduction of a probe, probably by rupturing the false membrane, gave it a free passage.

But a dull instrument is not, as I think, the sole cause of the accident. That the false membranes forming the true sac in empyema are frequently thick and resisting, must have been observed by all in the habit of examining those who die of empyema; but the looseness with which these membranes are sometimes attached to the pleura would not, perhaps, be as readily noticed, unless in connection with the accident we are now considering. In a case that has occurred to me during the present year, the false membranes were not only three or four lines in thickness, but dense and elastic like leather, and yet so loosely attached to the pleura that, by a slight pressure of the fore-finger, they could be readily separated in the form of a complete sac.

ART. III.—*Case of a Tumor at the Angle of the Jaw, with practical remarks.* By J. P. BATCHELDER, M.D.

IN November, 1828, Mr. Cleveland, about twenty-eight years of age, consulted me concerning a tumor in his neck, which had caused much anxiety. He was stout, athletic, and at first sight apparently healthy; but on close inspection, it was obvious that a malignant disease was beginning to exert an influence upon his constitution. Complexion, sandy; hair, reddish-yellow; skin, rather fair: temperament, sanguine; circumstances which had led to the belief that his malady was of a strumous character; but the skin, although fair, was not the thin, delicate skin of scrofula. There was also too much volume, strength and firmness of muscle, for that complaint; and besides, he had had in his youth none of the affections indicative of it at that period of life. His business, lumbering and boating on the Erie Canal, had subjected him to all the hardships, irregularities, and probably many of the dissipations incident to that mode of living. About ten or twelve months prior to his calling on me, he began to feel uneasiness about the ear and angle of the jaw, which was imputed to a cold, and therefore not regarded; but continuing and becoming more troublesome, the part was examined, and some tumefaction and hardness, not very definite, were discovered. A physician was at length applied to, who advised the common remedies, and encouraged him to hope that the difficulty would probably go off on the return of warm weather. As the tumor steadily enlarged, in spite of all the remedies and applications which had been recommended and prescribed by the medical gentlemen whom he had consulted, a surgical operation was suggested as the only means by which it could be removed. By advisement he called on me for an opinion as to the practicability of such a measure, and also for its performance if deemed advisable. On examination I found a tumor about as large as a turkey's egg, which commenced high up and deep in the space between the ramus of the jaw and mastoid process, and continued to increase until it occupied the whole region, and extended down the side of the neck nearly two and a half or three inches below the angle: being about five inches in length. The upper portion of the tumor appeared to be fast; the lower could indeed be moved transversely, but not longitudinally; if the muscles were put on the stretch, the whole seemed to be fixed, or rather rendered much less movable. The patient did not recollect whether at any time it could as a whole be moved. With the point of the finger passed into the mouth by the side of the tongue and beyond the palate, the tumor could be distinctly felt bulging into the fauces;—also impressions made upon it from without; but no clearly ascertained movement could be perceived. By pressing the finger as firmly upon the intervening tissues as the patient could bear, and moving its point about, we were pleased to find that it carried them with it along the inner surface of the tumor, from which it was inferred that they did not adhere to it with much firmness. By this experiment, the thickness of parts between the tumor and fauces was pretty well ascertained, and also that the point of the styloid process protruded further into the throat on this, than on the opposite side, owing, doubtless, to the pressure of the tumor.* The patient thinks he does not hear well

* It was recollected that this sometimes happened in cases where there was no disease.

with that ear, and that the side of the mouth correspondent with the tumor, is less moist than the other;—looking into that cavity, no saliva is seen issuing from the stenonian duct when the jaw is moved; and besides, the pulpy mass exterior to the tumor, seems to move rather freely over its surface; circumstances thought to corroborate the opinion that the parotid had been almost, if not quite, absorbed, and that the tumor had taken its place.

Although considerably conversant with tumors in that region, and somewhat practised in operations for their removal, this appeared to be the most formidable that had been presented to me with an appeal for an operation. I therefore desired time to study the case, and particularly to review the anatomy of the parts, and consider fully the relations which obtained between them and the tumor, advising the patient in the meantime, to live abstemiously, mainly on a vegetable diet, abstaining wholly from stimulating drinks, and keep his bowels open.*

Of the Nature of the Tumor.

Is it, as has been supposed, a strumous affection, or simply a tumefaction, chronic enlargement, or hypertrophy of the lymphatic glands in that region? Is it scirrhous, or rather, malignant? We shall not trouble the reader with a detail of the reasons, or reasonings, which were entertained in order to show what it was not, but proceed to mention briefly the principal considerations which led to the conclusion that it was malignant. 1. Its rapid growth. Notwithstanding the length of time that had elapsed since its commencement, its magnitude was deemed sufficient evidence of rapidity of growth. 2. Its fixedness. 3. Stony or woody hardness. 4. Insensibility on handling. 5. Occasional shooting, darting, lancinating pains.† 6. Frequency of pulse. 7. Appearance of countenance, which is concomitant with and indeed symptomatic of malignant disease, though apparently local. Conclusion: The disease is a scirrhous enlargement of a lymphatic ganglion, normally situated in the parotid gland, about equidistant from the angle of the jaw and its condyle;—its ramus and the mastoid process, which had by its enlargement and consequent pressure, caused the parotid itself, as has been suggested, to be nearly, if not entirely, absorbed.

Can it be removed by an Operation?

Having in a former communication laid it down as an axiom, that "every surgical operation should be based on the anatomy of the region which is the field of operative procedure," I feel myself bound

* I am not much in the habit of preparing patients, as it is termed, for operations. Unless there is some disease other than that for which the operation is to be performed, the performance should, in my opinion, promptly succeed the decision to operate. On no occasion have I regretted following this rule.

† These sensations, or pains, are peculiar to the serous membranes. When complained of by patients, the practitioner should always suspect one of two things, viz: either that the cause is in a serous membrane, or in a part, as a gland for instance, which circulates red blood, but which is undergoing a change by which that is excluded, as in scirrhus and cancer. It should be also recollected that serous membranes, in their normal condition, exclude red blood, and are, therefore, insensible, like bone, cartilage, or any other structure which admits colorless fluids only. Each structure has a feeling peculiar to itself; an important consideration for the medical man.

(which is my apology), to detail rather minutely, the anatomical relations and connections upon which the operation about to be described was predicated and planned. The inferior extremity of the tumor inclines forward and even presses upon the larynx, consequently is exterior to the cornua of the os hyoides and thyroid cartilage, which lie between it and the facial, lingual, and superior thyroid arteries and the hypoglossal nerve; farther down it is separated from the primitive carotid, par-vagum and internal jugular vein by the deep cervical fascia and sheath which envelopes them. When the chin approaches the sternum this part of the tumor becomes more prominent laterally; and if the mouth be opened while the head is in that position, the lateral prominence is increased, and forced back under the mastoid muscle, from which it was inferred, as the artery did not accompany this last movement, that there was no very intimate connection between it and the tumor. In deglutition, the tumor became likewise more prominent laterally, from the action of the digastric and stylo-hyoid muscles, by which the cornu of the os hyoides was made to ascend within the tumor, therefore it was not connected with the external carotid from the bifurcation, or with those muscles up to a level with their highest range of action. Thus far matters seemed to be favorable to an operation; but the state of parts above the muscles just named, was much more difficult to make out. The tumor fills the whole of that region, and consequently has a most intimate relation to and perhaps connection with its boundaries and contents, from which obstacles, formidable, if not insuperable, may arise. The solid parts which constitute the metes and bounds, the surgical landmarks of that region (i.e. above the posterior belly of the digastricus and stylo-hyoideus), are anteriorly, the angle, ramus, cervix condyle and zygoma;—posteriorly, mastoid process, transverse process of the atlas and the meatus auditorius externus:—internally, the styloid processes of the petrosum and sphenoides, and the "long rough ridge called processus vaginalis, just behind which and partially surrounded by it, is the styloid process" which, in most instances, extends from the root of the mastoid to a point opposite the styloid process of the os sphenoides.* The spaces between these solid structures are occupied by fasciæ, that complete the confines of this region which we denominate the parotid cavity. Externally, we have the fascia superficialis, and next, the fascia which comes off from the masseter muscle, one layer of which passes inside, and the other outside the parotid gland, around the margin of which they unite with one another and become firmly attached to the surrounding solids, viz: the angle, ramus and condyle of the jaw; the zygoma, glenoid cavity, meatus, and mastoid process.†

From the angle of the jaw a condensed portion of fascia passes upward, inward, and slightly backward to the styloid process, to which it firmly adheres. This constitutes what anatomists call the stylo-maxillary ligament;—also from the angle and ramus, a sheet

* This "rough ridge" of Horner, and "vertical crest" of Cruveilhier, the writer has been in the habit of thinking of much practical importance. It forms the dividing line between the parotid cavity, and the internal carotid, internal jugular and nerves which accompany those great blood-vessels; all being posterior to it.

† It should be remembered that the parotid has no capsule of its own, and that in the present case, owing to the absorption of that gland, these lamina, united by cellular substance, form a covering to the tumor.

of fascia (a part and parcel or prolongation of the last described) goes off, which covers the pterygoid muscles, and excludes them from the parotid cavity. It adheres to the external pterygoid process, and is perforated by the internal maxillary artery as it escapes from said cavity. The fold of fascia which forms the septum between the parotid and submaxillary gland extends from the angle of the jaw downward and backward to the anterior margin of the mastoid muscle to which it adheres; it then takes a turn upward and backward, covering the os hyoides, digastric and stylo-hyoid muscles onward to the styloid process and "vertical crest," from the anterior extremity of which it is extended to the styloid process of the os sphenoides. It adheres to the "vertical crest," and also to the other osseous structures above named. From these points of attachment it stretches further upward along the meatus auditorius; but seems to be quite thin and in some subjects entirely wanting in the neighborhood of the cervix and condyle, not being there needed for the security of any important part. The fascial arrangement just described forms not only the partition between the submaxillary and parotid; but the inner boundary of the parotid cavity, and consequently lies between the tumor and the internal carotid, internal jugular vein, nerves and muscles, and furnishes a barrier beyond which the surgeon's knife must not pass.* Not so with the external carotid, which passing within the digastricus and stylo-hyoideus, perforates this fascia just above them, and gets fairly into the cavity and wends its way up between the fascia and tumor about three quarters of an inch, where, in the normal state of the parts, it enters the substance of the parotid; it is this vessel with its branches in such fearful juxtaposition to the tumor, which gives us the most concern. Just at the above mentioned point where the artery enters the parotid gland, it divides into the internal maxillary and the temporal; the former goes off forward at a right angle; the latter passes up between the meatus and condyle, and escapes from the parotid cavity over the zygoma. If the conclusion that it is an enlargement of one of the lymphatic glands imbedded in the substance of the parotid be correct, what are its precise relations to the external carotid;—its branches;—and the portio dura? These glands† each enclosed in a capsule of its own, are situated near the place where the artery enters the substance of the parotid, and also where it divides into the internal

* This fascia passes from the root of the mastoid inward and forward along the "vertical crest" to the styloid process, and still further along said crest separating the parotid cavity from the stylo-mastoid foramen, jugular fascia and foramen caroticum, at which point it sends off a process forward to the styloid process of the os sphenoides, which separates the glenoid cavity from the eustachian tube, thence onward to the external plate of the pterygoid process, thence to the ramus and neck of the condyloid process of the inferior maxillary bone, covering the pterygoid muscles and excluding them from the cavity. The portio dura penetrates this fascia between the roots of the mastoid and styloid processes; the external carotid pierces it, as has been stated, from beneath the stylo-hyoid and digastric muscles, just below and exterior to the styloid process.

Upon this arrangement of the fascia and its attachment to the styloid process and "vertical crest" of the petrous bone, and the consequent security which it affords to the vessels and nerves above mentioned, the writer based and promulgated in private and public lectures the opinion of the practicability of removing the parotid gland, long before it had been, to his knowledge, accomplished by an actual performance of the operation.

† In dissection we generally see but one, but there are more.

maxillary and temporal. When one enlarges it forms for itself a sort of cyst of condensed cellular substance; compresses the parotid, and causes its absorption, and finally comes by degrees to take its place without assuming exactly the same relations to the arteries and nerves as obtained between them and the parotid in their normal state; still relations exist between them and the enlarged gland, which it is very important to ascertain and settle as far as practicable. As the lymphatics and lymphatic glands are in general more closely associated with the veins than with the arteries, and more especially so in the neck, it was inferred that the vein, which is normally anterior to the artery, lay between it and the tumor; that the latter, enveloped in and surrounded by a cyst formed of condensed cellular substance, lay anterior to both artery and vein, which would be found on its proximal or mesial side. This view is corroborated by the fact that the finger introduced deep into the throat could feel not only the tumor but the styloid process much more prominent and farther back than on the opposite side.

In Conclusion.

The circulation of the vessels in that region not being affected; nor the functions of parts supplied by the portio dura and branches of the trigemini disturbed in any appreciable degree, the opinion entertained was, that neither the vessels nor nerves were involved in or compressed by the tumor, or very closely connected with it. If we avoid the principal arteries, shall we have hemorrhage from another source? The apparent circumscription and hardness of the tumor, taken in connection with the fact that the veins on the surface are but slightly varicose,* favors the idea that neither its own circulation, nor that in and with contiguous parts, is very active; consequently that the connection between it and them is slight;† therefore little or no hemorrhage from small vessels is to be apprehended, provided we keep close to the tumor, or as much as possible between its capsule and the cyst already mentioned.

Operation.

As the operation was almost exclusively based on the anatomy of the parts, the surgeon, who is an anatomist, will be able to anticipate nearly every step of its performance, therefore, the details of the plan, with the exception of the following points, will be omitted.

1. Injure the parotid gland as little as possible. 2. Dissect from below, upwards, and endeavor to gain the point of the styloid process near which the external carotid generally passes, and where it may be compressed or tied. As the proposition for tying the external carotid between the bifurcation and the digastricus is not, for reasons deemed conclusive, entertained, measures for securing it after emerging

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* Varicose and tortuous veins in the vicinity of indurated structures, as scirrhus, cancer, &c., are a sure sign of obstructed circulation within them, and also in the parts immediately surrounding them;—in structures softened by disease, it is an indication equally sure that the circulation is active.

† The fixedness of the upper portion of the tumor was regarded as arising from close contiguity of solid parts, rather than from strong adhesions to surrounding tissues. The freedom with which the lower jaw moved, although considerably restrained, seemed, however, to militate against this view.

from behind that and the stylo-hyoid will be taken. 3. Be prepared to tie the common carotid. 4. Regard the direction of the external carotid, above the styloid process. 5. Find the transverse process of the atlas. 6. Preserve the trunk of the portio dura from lesion. 7. Tie, if necessary, and before dividing, if practicable, the internal maxillary artery;—also, the temporal. The patient being laid upon a table of convenient height, with the body inclined to the opposite side, and the chin slightly elevated, an incision was made through the integuments, which commenced over the zygoma, about half an inch in front of the condyle, and curving backward near the meatus and the mastoid process, extended down along the anterior margin of the mastoid muscle, to the side of the trachea, where it terminated an inch or more below the inferior extremity of the tumor.* A dissection an inch in length was made through the fascia to the surface (as was supposed) of the tumor on its posterior side, into which a director was passed in contact with that surface, down to the termination of the incision; a knife run along its groove divided the platisma myoides and all the aponeurotic coverings; pressure being made on the cardiac side to prevent the admission of air into the external jugular, which must be necessarily severed by this movement. The director was again introduced and carried upward, and the parts lying over the face of the tumor in that direction divided in the same manner as near the meatus as could be well done. To ascertain whether the surface of the tumor had been positively reached, the point of the finger was pressed upon it and moved in different directions, by which it was shown that a layer of membrane (part of the cyst probably) moved with it, thereby proving that the tumor had not been actually exposed. This intervening membrane was pinched up, opened, and similarly divided through its whole extent. By pulling the flap, made as described, upward and forward, the lower extremity and posterior side of the tumor, *now absolutely denuded*, were raised from their position, and the work of detaching commenced. The fingers and handle of the knife were employed in separating and pushing along and away from the surface, the cellular substance, occasionally touching it with the edge when accumulated so as to prevent further progress without such application. The portions above mentioned were thus detached to a level with the angle of the jaw, and posteriorly a little higher. The flap, consisting of integument,

* The reason for curving the incision backward and extending it to the trachea so far below the tumor, were, 1, to inflict the smallest possible injury on the parotid gland, if any of it remained, in order, to prevent salivary fistulæ, which authors tell us are so apt to follow wounds of the parotid, a contingency which the writer has never witnessed, although he has had occasion in a number of instances to make deep and extensive incisions in that body in operations for the removal of tumors from that region; but in no case has the discharge of saliva continued so as materially to interrupt the healing of the wound, much less produce fistula. 2. To raise the tumor from its bed by means of the convex flap.[a] 3. To facilitate tying the common carotid, should that step be deemed necessary.

[a] Frequently when a tumor has been laid bare by an incision half round its base, it may be lifted from its bed with little dissection, and turned back with the flap and peeled off with the fingers. I think this idea was derived (in 1845), from seeing a patient from whom Prof. J. C. Warren, of Boston, had removed a tumor by a curvilinear incision, since which the writer has been in the constant habit of planning his operations for the extirpation of tumors upon the principle of a flap operation, in all cases suited to that method of operating.

layers of fascia, platisma myoides, remnant of the parotid, and part of the cyst, was separated by a few sweeping strokes of the scalpel, with its edge in contact with the tumor, and dissected from it as far forward as the angle and ramus, the tumor being at the same time forced downward and backward. By means of a large strong hook its inferior extremity was further drawn out and back, and the process of detaching on this side continued inward, forward and upward, behind and within the angle,* and also the tumor, until the styloid process, and soon the external carotid could be felt passing over it at least three-eighths of an inch back of its point,† where we found, to our great satisfaction, that it could be compressed so as to stop the pulsation in its branches, and probably command the flow of blood through them; of the latter, however, we did not feel quite assured, as Mr. John Bell tells us that stopping the pulsation of an artery did not obstruct the flow of blood through it so as to prevent hemorrhage, which accords with the writer's experience when large arteries are concerned.‡ Being able, as was hoped, to command or control the external carotid, we proceeded to dissect cautiously along the mastoid muscle and process towards the meatus, in doing which the integument sustaining the lobe of the ear was raised and turned back, so that the line of separation went from the process to and past the meatus. In the vicinity of the transverse process of the atlas great care was taken to avoid the occipital and posterior auris and the other great bloodvessels and important nerves which lie on its mesial side, within half an inch of its extremity, not forgetting the trunk of the portio dura as the dissection advanced. As the tumor seemed to fill the whole space, and moreover to be firmly adherent, much difficulty was experienced in accomplishing this part of our task; but by keeping closely in contact with it, drawing and holding it as much forward as possible, and pushing the cellular substance away from it backward, with the handle of the knife, which was also moved along the surface (the edge being substituted, when the accumulation required), some progress was made. It was likewise attempted to force the handle of the knife upward, within and in contact with the inner surface of the tumor, and then carry it backward and around its posterior side; something was also gained in this way, yet less than was anticipated, owing to the circumstances just mentioned; but by acting alternately in this and in the other way; by pulling, pushing, cutting and tearing a little here and a little there, the tumor was somewhat loosened and detached, so as to

* The relative distance between the angle and styloid was considerable, owing to the fact that none of the molar teeth in either jaw had been extracted. Both teeth and jaws were amply developed.

† This artery almost always passes near the point of the styloid, but sometimes it varies, as in the present instance, in which this irregularity was remembered, and the caution predicated upon it exercised. In prosecuting this dissection the stylo-maxillary ligament was rather indiscreetly trenched upon (perhaps divided); but sometimes "our indiscretions serve us well," and so it proved in this case, as will be seen in the sequel.

‡ Since writing the above I have heard Dr. Mott, who is daily unfolding the vast robe of professional experience, express, in one of his lectures, an opinion adverse to that of Mr. Bell. I am aware that every observation of the Professor is entitled to great consideration; but if I do not mis-remember, I have seen, in one instance at least, and I believe two, the blood flow from the femoral artery in a stream which would have soon caused death, when all pulsation in the arteries below had been suspended by the pressure of the tourniquet. I also noticed, that in color, it resembled venous blood. A curious fact.

enable us to pass the transverse process of the atlas and reach, nearly if not quite, the external carotid, the course of which is upward and backward, from where it emerges from behind the digastric and stylo-hyoid muscles. We could not, however, perceive its pulsation, and were therefore ignorant of its precise situation relative to parts which had been probably disturbed by the disease and operation.

Returning to the angle; an attempt was made to extend the dissection further up, along the ramus and cervix, and separate the tumor from them and the pterygoid muscles, and also reach the internal maxillary artery; but with little success, owing to the want of room and fixedness of the tumor; yet something was gained, for it was rendered more compliant. By separating a little here and a little there, the tumor became still more yielding, which now induced us to turn our attention to the upper and posterior side, in the vicinity of the zygoma, condyle and meatus; and there at first the prospect was more flattering; but as we proceeded, care being taken not to wound the temporal artery as it emerged from within and above the tumor, the firm in-wedging and strong adhesions of the tumor seemed to furnish almost insuperable obstructions. We were by this time able to ascertain that the cause of difficulty was a protuberance from the upper part of the main body of the tumor, which lay between the neck of the condyle and external pterygoid process anteriorly, and the meatus posteriorly, and apparently filled the whole space where the deep cervical fascia is deficient, protruding inward very much more than seemed compatible with the safety of the patient, or comfort and convenience of the operator. The dissection at the posterior part of the tumor was resumed, but with indifferent success; the portion filling the space above mentioned, remained undetached and immovable, and no room for prosecuting the dissection. What shall we do? as Mr. John Bell did, apply a ligature and cut away what we can with safety, and leave the remainder to slough off? or tie the external carotid and tear away the whole?

As the condyloid process was apparently the principal obstacle in the way of getting at the portion which defied all efforts at dislodgment, an assistant placed the fingers of one hand upon the angle, and forced it forward, and depressed the chin with the other; the effect of which was to remove the angle and condyle half an inch forward out of the way; and it is doubtful if that amount of space was ever more acceptable, or more highly appreciated than on the present occasion. How much of that result was attributable to the partial or entire division of the stylo-maxillary ligament, which also loosened the styloid process and facilitated the introduction of the finger, &c., I will not pretend to say.* The tumor was forcibly drawn outward, while the cellular substance and connecting medium were sedulously pushed with the handle of the knife, in all directions, from the protuberance—the edge being not unfrequently applied. In this way the operation was prosecuted until the tip of the finger could be forced in behind the morbid part from below, and the handle of the knife from above, by which, and with other helps, it was wrenched out of its bed, and finally separated from the body by a few touches of the scalpel. On examining the scirrhous

* Should I again be similarly circumstanced, I would run a probe-pointed bistoury down to the angle, and there in close contact with the bone, divide the stylo-maxillary ligament.

mass, we were gratified to find that the whole tumor had been removed. During and subsequent to the operation, some eight or ten small vessels were tied. The loss of blood was less than had been anticipated. The artery that bled most freely was probably the transversalis faciei, which was small, as had been predicted on account of the large size of the facial.* The wound being cleansed, the solid textures which we have denominated "the metes, bounds, and surgical landmarks of the cavity," were made out; also the external and internal carotids; the occipital and temporal could be traced. The internal maxillary was not found, nor was it much looked for, inasmuch as it did not bleed. Every bleeding and pulsating point was sharply scrutinised and secured by ligature, if leakage was apprehended; the flap adjusted and confined in its place by sutures, straps, compresses, &c., and the patient laid in bed, with the head elevated, and the cold water dressing ordered to be applied in the course of several hours. From the paralysis of certain muscles of the face it was obvious that branches of the portio dura and trigemini had been divided. The palsy was less than might have been expected from the extent and character of the operation. That the trunk of the portio dura had not been injured, was shown by the fact that few parts supplied by that nerve were palsied. The operation, which was very painful and lasted more than an hour, was borne with great fortitude.

The wound, except about an inch at its lower extremity into which a pledget of lint had been inserted,† and at the ligatures, united by the first intention. The pledget and also most of the ligatures came away at the first dressing; the whole speedily healed with apparent soundness, and the patient soon left rejoicing in the supposed cure. Painful as it may be, the reverse of this picture must be exhibited. In about three months a thickening, soft and quaggy, was perceived in that region, which continued to increase until ulceration of a horrible character ensued:—Profuse discharge of ill-conditioned matter, with frequent hemorrhages, exhausted and destroyed the unfortunate man.

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* I believe it always holds true that the transversalis faciei is small when the facial is large, and vice versâ, when the latter is small the former is large.

† After amputations and other operations, I generally resort to that expedient, to prevent union by the first intention in the most depending part of the wound. The retention of serum, blood, or even pus, which may have been effused or secreted in portions of the cavity where union by the first intention may not have taken place, is thus obviated. By omitting this precaution, I have known extensive abscesses form in a stump, and after other operations, which not only delayed the cure, but greatly enhanced the suffering and danger of the patient. The application of the water, by keeping the dressings moist, facilitates the escape of fluids from within, in addition to other advantages which result from its use. To give time for the plasters to become well set, its application should be deferred for some two or three hours.

P. S. I have known another case very like the one just reported, but much less formidable at the time of the operation, which was as quickly followed by a similar result. In both, the primary tumors were scirrhous;—the subsequent, encephaloid.

Drs. Pomeroy, Burge, Main, and Crossman, with a number of medical students, were present and assisted at the operation.

ART. IV.—*The Psychological Zoology of Man.* By ALONZO CALKINS M.D., of New York.

SUPPOSE the myriad intergradations of animated being, from the radiated asterias up to the most complex of the vertebrate orders, to be suddenly unfolded to the eye of the zoologist in one grand panoramic array, the inquiry would arise, are these forms the products of superaddition upon a primary germ, or the creatures of independent evolution; incrementary developements only, or specific and intransitive individualities?

For the solution of this question recourse has been had again and again to comparative anatomy, but unsatisfactorily. Phrenology, too, has been invoked to interpose a decision. But phrenology no more than physiology has succeeded in getting behind the broad fact, that the encephalon is multipartite in function, and that while the automatic excitabilities seem to reside in the spinal cord and the cerebellum, to the brain proper is appropriated the function of thought and reason.

The chimerical fantasies of Darwin and Lamarck are fain to discern the archetype of man in the mollusc. This, by a series of metamorphosic transmigrations through chiliads upon chiliads of years, is at last transformed into the *homo caudatus*, or troglodyte. Monboddo elevates the series yet higher to its culminating point, by the simple conversion of the longtail into the *homo curtatus*, or *bobtail*. Speculations so recondite, yet at once so luculent, might suffice to stop the mouths of gainsayers, but for the stubborn fact that monkeys, in their irreverence for dreamy philosophy, still cleave to their tails, or rather their tails still cleave to them. "*Curtæ nescio quid semper abest rei*"—curtailed monkeys are not men.

The author of the "Vestiges," also, a champion arrayed in the well-furnished panoply of geological lore, heralds forth the favorite hypothesis of the materialist school, the doctrine of gradationary development out of a solitary archæus. The scheme is fortified by presumptive instances, as recognized in chemical, geological, botanical, and even ethnological analogies. Now a test-case must be palpable, unequivocal, pertinent. Does the oak ever yield other than an acorn, does the acorn germinate into something else than an oak? When has the sheep degenerated into the goat, or the goat been transformed into the sheep? Form may become more symmetrical so that the lineaments shall better quadrate with a beau ideal, and the blending of light and shade may grow more conformable to the picturesque, but the configuration and the conformation of the original members remain constant under all specific mutations. The argument, specious and elaborate though it be, is overset at the start by the very notable, and what may be termed crucial fact, that the hybrid productions resulting from contubernation between congenerous families, invariably die out, through infirmity or else abortive action of the fecundative energy, in the first generation.

The appeal to physiology and physical analogy is thus seen to be sustained by no material facts bearing upon the precise issue; let us look into the merits of the psychological argument.

Now the understanding takes cognizance of two classes of ideas only,—its cogitative perceptions of material things, and the secondary conceptions or reflex thoughts in correlation with such perceptions. "Nihil

est in intellectu quod non prius fuerit in sensu." Imagination never sallies forth on a tour of exploration, having first cut loose from the senses its pioneers. Dryads and syrens, centaurs and mermaids, inconcinnate or amorphous as they may appear, all have their archetypical elements in the ideas of sensation. Intellection then can be regarded in no other view than as homogeneous in essence and homologous under exercise. To this faculty of intellection in the concrete we apply the name *soul*, of which *mind* is but alter et idem, the abstract exponent.

Such exposition seems to accord to the mammalia as well as to man a certain duality of character. In anticipation of such inference, some metaphysicians would fain invest man with a tripartite constitution, by the intervention of a *tertium quid*, a something denominated *spirit*. The distinction is without a difference.

What now is reason, what is instinct, and by what criteria are they contradistinguished? Is the diversity a distinction *in modo*, or *in re*—a diversity in degree only, or furthermore in kind? Is reason a primordial and fundamental characteristic, or only a sequential and progressionary evolution of instinct?

Reason abstractly, or the faculty of ratiocination, is the process of educing a resultant idea from the catenation of two or more simple ideas in some of their relations and under variable conditions. Judgment, which involves sensation, memory, abstraction and comparison, is reason in its elemental form.

Instinct is native reason, but defined by and limited to a specific range, the physical wants of the animal. Instinct is mature at birth and antecedent to experience; reason, a seminal point in its origin, expands from birth and matures upon experience. Instinct—*spiritus intus*, is automatic and infallible; reason, calculative and deliberative, if fluctuative at first grows stable with time. The former, like the æsthetic faculties, is perfect in its nascent state; the latter, like the locomotive enginery, tremulous and vagarious at first, gains strength and steadiness in progress. The one is the axiomatic and postulative, the other the problematic and deductive. Instinct further is restricted to the domain of sensation; reason, in obedience to volition, transcends the bounds of sense to penetrate the subtle and spiritual. They stand, moreover, by measurable degrees in inverse ratio and in antagonism to each other, the lines of instinct fading and contracting as those of reason deepen or diverge.

As exemplifications of pure instinct may be adduced, the loom-work of the spider, the cocoonery fabric of the silkworm, the nidification of birds, the architecture of quadrupeds and other genera. The caterpillar turns again towards the tree from which it has just been shaken; the cat, transported in a blind sack, traces its path home again; the kalmia, eschewed as a poison by the sheep, the goat crops with avidity; the razor-bill poises its egg on a spinous ridge of rock; the woodpecker retraces its migrations as returning vernal zephyrs invite to amorous dalliance; the duckling, just liberated from the shell rushes into the slimy pool to the consternation of its foster-parent the hen. The eagle pierces with his talons, the ram butts with his horns, the horse strikes with his heels, the elephant gores with his tusks.

In mixed or modified instinct, reason looks out in various degrees of illuminating power, here in crepuscular glimmerings as it were, there in

brighter scintillations. The osprey, foiled in its attempts upon a big oyster, will poise it at an elevation over a rock. The partridge, fertile in artifice, decoys the fowler by feints till the young have got concealed, then she too is missing. When Bougainville touched at the Falkland Islands, the land animals, and even the birds would flock around his crew, till admonished by the acquaintance to observe a prudent distance. The fox, hard-pushed by the hounds and cut off from retreat, will bury himself to the neck in a quagmire, or, Falstaff-like, will play the death-scene stratagem, and so allow himself to be shouldered and carried off to be skinned, awaiting his opportunity when the remissness of his captor shall give him a chance on the leg again. The dog will guide a blind man with all the circumspection of a boy, or counterfeit a rap upon the door and so regain ingress to his familiars of the kitchen, or ferret out a thief who has taken refuge in a crowd. The ratiocinative may even predominate over the instinctive, as in the dog told of by Sergeant Wilde, who would slip his collar at midnight and stray off upon a marauding excursion, always observing the precaution, however, to get back and readjust his collar ere daybreak.

Allied to instinct on the one hand, on the other to reason, is an intermediate class of impulses, the appetites and the passions, or in phrenological nomenclature the affective faculties and the sentiments. Instinct regards the means alone, reason the end through the means ; but these when unchecked by the supervisory monitions of reason look to the end primarily, and irrespectively of the means. Under this division the mammalia are common participants with man.

Metuunt, cupiuntque, dolentque, gaudentque."

Love, rage, revenge, fear, arrogance, dissimulation, joy, grief, all have their counterparts among the quadruped kinds. The horse cheated with a bridle and an empty corn-basket may turn heels upon his rider; the elephant tricked out of his ration of arrack has been known to seize his mohout and give him a fatal toss into the air. The bull swaggers over the field, vain of success in expelling his competitors ; the lion disdainful perhaps of a meaner prey, seeks out a tiger or a leopard for his antagonist. The porpoise gambols about a ship with the frolicsome glee of a boy at his pastimes, and serpents if fabulous charmers only may themselves be charmed, throwing themselves, like the cobra, into frisky saltations to the rude din of the gong. The dog disconsolate upon the death of his old master has been known to moan for days and finally perish over his grave. Like susceptibilities pertain to the satyrus or orang. Laughter, too, whether physiognomical or vocal, is an emotional phenomenon essentially, and is in analogy with the rapturous caperings of the dog, on regreeting a favorite playmate child. The ironical grimace of the ape and the sardonic grin of the baboon are in no wise exceptional cases.

Hitherto we have been occupied with resemblances, approximations, and analogies; let us further inquire, whether any specific characters distinguish man in particular, and segregate the race from the promiscuous congregation of the animated tribes at large.

Now the infant at the breast indicates its instinctive propensities as obviously as the young calf, but the parallelism begins to be disturbed in the very dawning of experience. The divergence commences upon memory. That of the brutes is exercised under pure spontaneity ex-

clusively, man's rendered unremittingly subservient to the will. The horse disposed to halt on the road before a particular door checks himself only momentarily perhaps, as if suddenly reminded of his lashing the day before. So the calf dragged into the slaughter-house sets up forthwith a lusty bellowing, as though admonished of its fate by the array of strange implements in connection with the previous abstraction of its companions. More: while the memory of the one class is circumscribed by the limited horizon of the visible and tangible, the human mind is ever prone to range as if in salient lines beyond the verge of that horizon,

"To climes beyond the solar road."

Another deviation consists in the educability of man. The Canary-bird of to-day evolves its notes in all the mellow richness of an experienced songster; the child becomes a musician only after repetitious efforts and tedious months. The offspring of the pointer or the pacer may with less careful training perhaps excel the parent, but such progression is rather an expansion of instinct on a single line of direction, than an essential transformation of its character. The mocking-bird may be instructed indeed to imitate song-notes foreign to its own, but the hen with all her assiduity is amused with an ovoid fragment of chalk. The rabbit burrows still at the base of a rock like all generations of rabbits aforetime, and the beaver of to-day constructs his chambered dam upon the model of the Noachic epoch.

The argument is not repelled by the consideration, that instinct ranging within definite lines appears in instances as if transcending reason; for its indications though exact for their purpose are limited by strict isolation to such purpose. The wasp is a paper-maker superior to untaught man, yet none the better for having precedence in time before the primitive borderers upon the Hoang-Ho. The eagle pounces upon the hawk in a cycloidal curve, the line of maximum regularity and velocity; the sheep and the kine as barometrical monitors are hardly inferior to the Torricellian gauge. The bee but a week old has furnished in the hexagonal shape of its cells and the pyramidal structure of its roof, a practical solution of an intricate theorem in the quantitative analysis of maxima and minima; yet who for all this forsooth presumes the bee or the eagle or the sheep to have attained to the feeblest apprehension of a single geometrical truth?

A broader principle of distinction is yet to be set forth, remoter in its bearings, weightier in its dependencies. The inferior tribes, hedged in as they are by the contracted circle of perception, and from the absence of an independent volition being further retained in vassalage to the senses, can never exceed the limits of the most rudimentary generalizations. Man, on the contrary, whether spontaneously or otherwise, through the impulsive energy of an auxiliary will, makes a per-saltum advance immeasurably beyond, bounding from generalizations to generalizations, series upon series. Thus man *reflects;* he only takes cognizance of his own cogitations and feelings objectively; he only searches after the *ergo*, or scrutinizes the *quid*.

In such view man is seen to be invested with the imaginative faculty by way of eminence. The dog is never translated in his dreams beyond the kitchen-hearth or the barn-yard; man has taken to himself "the wings of the morning." Pug may daub the wall with his master's

brush, or affectedly thrum a violin, or play pantomime with a razor and slit up his own weasand, or "spectacle bestrid" gravely chatter over a newspaper, and all without a solitary conception exceeding mere vocal expressions and attitudes. Was ever yet a cow or a horse seen to climb a terraced bluff, gazing in rapturous ecstasy upon the landscape around? How superlatively insensate and ridiculous to recite a Suliote war-song to a gathering of monkeys, or to harangue a troop of buffaloes on the theory of social reform!

Another peculiarity, viewed as a modal rather than a formative cause, is language. Elementary sounds, indeed, the vocal enunciations of emotion, and the presupposed basis withal of artificial language, are appreciable by the quadruped races not only but by the inferior orders in general. Such maintain an intercommunication of sentiments by consonant modulations of tone, and the domesticated species, moreover, are instructed to connect familiar things with the appropriate names, and to associate with simple phonetic phraseology corresponding acts or behavior. The parrot hails the wayfarer with its voluble gibberish, simply appropriating the successional sound to some idea of sensation, but unlike the child it never attains to any appreciation of words in their dynamic and transferable relations as elements of speech. What storybook reader ever confounded the blattering echo of a parroquet with articulative understanding? Artificial language, the medium of abstract thought and the exponent of all the complicated operations of the mind, and in such aspect the grandest monument of human skill, presumes a power of analysis and a scope of generalization, in contrast with which the mere combination of instinctive or of imitative sounds is as infinitesimality to infinity.

The idea of number, involves the power of generalization in its most abstract and absolute form, and here a chasm opens, spanless and unfathomable. Brutes have no definite conception of plurality beyond its broad distinction from individuality, and entertain in no shape the obscurest notion of mathematical notation. The dog at dominos, is guided by the pictorial, not by the numerical impression, and is indifferent about playing either of two or three pieces bearing the common number required. The baited bull is aware of the difference between one lancer and half a dozen; the tiger, eager to clutch a hunter or two, recoils before a company; yet which of these has ever solved the simplest arithmetical problem, as that "two and two make four?" Man, on the contrary, calculates the visible and tangible not only, but overleaping as if the station-points of space and time, he would scale the interminable vault of heaven to plunge into the cometary vortices, or soar along the stellated arch of the Lacteal way, till dazzled by the gorgeous splendor of their fires, or whelmed in the abysmal sweep of their gyrations.

Thus is man exalted above the various terrene host of animated existence by the transcendent prerogative of genius.

> "Indulsit communis Conditor illis
> Tantum animas, nobis *animum* quoque."

But for man's presence, what face would this terraqueous orb show forth? Solitary wastes, sombre forests, pestilent fens, savage mountains, and desolate fields—

> "A vast immeasurable abyss,
> Outrageous as a sea, dark, wasteful, wild."

Chaos verily would spread his blighting shadow abroad. Here the owl would hold his court, there the lion would make his habitation; day resounding with the eagle's screech and the panther's scream, night echoing to owlhoots and the growl of the bear; trees withering under the locust, flowers wasting before the caterpillar. Now the desert teems with flowers, now the wilderness is vocal with song. Other tribes succumb to extraneous agencies, man has identified his birthright in the subjugation of such agencies. But for him the weak had been trampled down or exterminated by the strong; now the haughty elephant and the huge rhinoceros, under whose tread man is but as a grasshopper, are subdued to his service or awed into exile. The mountain crag has been cleft asunder, and the earthquake-chasm arched over; rivers have been turned from their ancient beds, and seas hedged about by enfilading walls. The turreted peaks of colossal clouds have been channeled by aerial ships; the great central fire itself has been spanned as with a measuring-line, and the thunderbolt even, ictus fulmineus, has been tamed to the guidance of a human hand, and thought and speech are made to vibrate swift as light along its chain-links!

The interval widens as we look into the interior chambers of man's spiritual frame. The sensuous oblectations of the hour—the "being's end and aim" to the inferior genera, are to him but as scansory points in his strides after the immense and the infinite. Brutes live in the present; man lives in the past and the future. He, ever aspiring after the unseen and the untried, finds a fruitionary satisfaction in the "earnest expectation" of that future; but what individual from among the animal groups conceives of a pleasure or a pain beyond to-day?

> "'Tis *man alone*, that joy descries
> With forward, and reverted eyes."

The inferior orders, thus arrested through defect of constitution within the very vestibule of generalization, are in course unequal to the ideal comprehension of an extraneous, aboriginal Cause, endowed with the attributes of personality, ubiquity and omniscience, and so necessarily blind to all discernment between moral rectitude and moral obliquity. On like grounds must such be accounted as unsuited to a sphere of beatitude essentially spiritual. The soul of the beast is a sensuous soul, prone to annihilation with its material tenement. But what preeminence, queries the pyrrhonist, hath man above a beast, seeing all go unto one place? Where, exclaims a zoologist, is the mind of the homunculus, growing up as it does before our eyes, maturing with years, decaying under decrepitude, and finally with the last expiratory collapse going into extinction? "Ex nihilo nihil, in nihilum redit." The argument is a sophism, a *post quod non*. The doctrine of the revivification of the human soul by a palingenesial energy in its transmigration to a new theatre of action, while it is a cardinal article of faith, becomes from the foregoing considerations a philosophical probability. Not without reason then does the philosopher, when his last sands have run, lay his head upon his pillow with the euthanasial ejaculation on his lips—

> "Non omnis moriar."

ART. V.—*On the Application of M. Riench's Test for the detection of Arsenic, to Medico-Legal Inquiries.* By D. P. GARDNER, M.D., of New York.

THE discovery of arsenious acid in complex fluids has always been an important problem in the science of toxicology, by reason of its frequent use for criminal purposes. From the statistics of the *Viscount de Cormenin*, it appears that between the years 1830 and 1840, three hundred and thirty-five cases of poisoning by arsenic, implicating four hundred and fourteen persons, were investigated by the Parisian tribunals alone; and two hundred cases more were ascertained, but not brought before the courts. The use of this substance, in minute doses frequently given, to produce a lingering death, has entailed upon the chemist the necessity of furnishing himself with the most delicate tests. For as the certainty of detection increases, the temerity of the criminal also becomes greater, so that the cause of morality is directly advanced by these researches.

Numerous tests are recognized in medicine, but all of them, with the exception perhaps of Mr. Marsh's, are of little value in collecting the poison out of its solutions. This part of the process is, however, the most important, for the profession have unanimously agreed that no series of precipitations is satisfactory, unless the metal be finally reduced. If sulphuretted hydrogen be used, as recommended by Dr. Christison, for the precipitation of the arsenic, we are embarrassed afterwards by the collection of the matter thrown down, and then the reduction. This, and many other processes, advised by writers, require much time, with the use of materials not belonging to the medicines of a country practitioner, and they are less delicate than the method of M. Riench for the discovery of arsenic as a commercial impurity in various fluids and re-agents. The reader is referred to No. 126, December, 1841, of the London, Edinburgh and Dublin Philosophical Magazine, for an abstract of M. Riench's paper "*on the action of metallic copper on solutions of certain metals, particularly with reference to the detection of arsenic.*" That article led me to examine the utility of the test recommended in medico-legal questions, and from an extensive series of experiments, I became convinced of its great value, and have communicated this paper with a view of introducing to the notice of the profession, the simplest, and, as I believe, the most effectual method of *collecting* arsenic out of suspected fluids.

The principle on which the test is founded, is that *pure hydrochloric acid* exerts no action upon bright copper—but when certain metallic solutions are present, as an adulteration in the acid, it then attacks the copper, and there is thrown down the reduced metal of the solution. Many metals will thus precipitate themselves, but some do so when in minute quantities, whereas others fall down only when in large amounts. Some salts of mercury are reduced without hydrochloric acid, whilst arsenic in no proportion can tarnish copper, unless the acid be present.

Before Riench's process could be adopted by physicians, it was necessary to ascertain how far organic matters, such as may exist in the contents of the stomach, &c. were calculated to embarrass the operator. The existence of medicines, in the suspected fluids, might also destroy the value of the test. These inquiries, and the hope of simplify-

ing, and rendering the process more certain, caused me to enter upon a full examination of the matter.

There are three stages in the manipulation: 1. The collection of the arsenic in Riench's test; 2. Its sublimation; 3. Its separation from other substances.

1. The *collection* of the poison out of a solution, in which no other active metallic agent is present, is most easily effected by the following process. A piece of copper, in the form of wire or sheet, is to be filed bright, and introduced into the suspected fluid; to this is then added a small quantity of pure hydrochloric acid, and the whole boiled together in a glass flask. Upon examining the copper after a few minutes' ebullition, when arsenic is present its surface will either be found coated with a film of the color and lustre of rolled zinc, or a deep black with slight polish; or covered with scales of a black color. These various appearances depend upon the quantity of the poison present, and the extent of the surface of copper. If the boiling be continued after the scales are produced, they drop off, and are lost in the fluid, so that the collection becomes imperfect. All the arsenic present can be separated in this way, therefore the copper not only reduces it, but also affords us an accurate measure of the amount in solution.

In this part of the subject, the most important practical considerations are the determination of the amount of metallic copper to be used, and the method of procedure in dense fluids, such as broths, matter vomited, the blood, &c. In ascertaining the first, two things are to be remembered; 1st, that in the second step of the operation, the sublimation, the tube should be as fine as possible; and 2d, the thickness of the deposit of arsenic is not at all important, excepting that less copper is required, but there is danger of its falling off in scales if too little is used. The only rule that is applicable to all cases is, to examine a known small proportion of the fluid first, and ascertain how much copper is necessary to deprive it of all its poison; the estimate thus made may be applied to the remaining portions of the solution. If sheet copper be used, it should be cut into strips, not exceeding one fourth of an inch wide, and one inch long, so that they may be readily admitted into the subliming tube. The whole amount of poison present may be sublimed in several tubes. To be certain that all the arsenic has been separated from the fluid, successive strips should be introduced, and the boiling continued longer and longer, until no stain is produced in thirty minutes.

The color and consistency of the fluids examined, may be sources of much embarrassment, when the usual tests are employed; and filtration is a necessary part of the process when the fluid re-agents are used. But neither of these qualities opposes serious impediments to the method under consideration. The coagulability of the solution is, however, a serious obstacle, because the arsenic is shut up in the coagula, and cannot be brought into contact with the copper. To remedy this evil, the coagulum should be cut up into minute pieces and warmed along with muriatic acid, the consequence of which is that all the poison will be dissolved by the acid, which is one of the best solvents of arsenic. The solid parts should be afterwards separated, by straining through a strong piece of cloth of close fabric. In this way, the drug can be collected out of blood. When the coats of the stomach are to be tested, they should be cut up, as is usually prescribed, and boiled with dilute acid. In operating upon fluids which are not yet coagulated, it is best to add

dilute hydrochloric acid before heating, for in this way they do not form so dense a solid, but the acid exerts its solvent action throughout the mass, and may be afterwards pressed out by straining.

A certain number of copper strips will be thus obtained, coated with arsenic, and the next step is to remove from them any substances which may interfere with the second part of the process. Water, oleaginous matters, and solid particles from the solution adhering to the copper, are all to be removed. The first can be easily effected by bringing the metal into contact with bibulous paper and then warming it, gently. The other substances must be cleared off by introducing the strips into some warm water in a capsule, and moving the vessl so as to communicate a gentle motion to them; friction should be avoided. The cleaning may be continued in three changes of water, and the copper should be afterwards dried as already directed. It is of considerable importance that no empyreumatic vapor should be produced during the second stage of the manipulation.

2. The *sublimation* requires to be conducted with great nicety, when the quantity of poison is minute. The tube used should be about six inches long, and open at both ends, one of which is drawn out to a perforated point. The diameter must be diminished with the amount of metal collected; when that is very small it should not exceed one tenth of an inch, and never be larger than is necessary, and as small as possible to operate with. The strips used in delicate investigations will therefore be reduced in size so as to enter the subliming tube. The greatest attention must be bestowed to cleaning the tube thoroughly; a piece of rag, attached to a wire, should be introduced, and drawn up and down, until all dust is removed; the outside should also be examined, so that it may be perfectly transparent. It must be dried by being warmed over the flame of a spirit lamp.

The copper strips, or as many as may be desired, are then to be introduced into the tube, so as to fill up the narrow end for about two inches. They must not be packed together, for it is necessary that air should pass freely amongst the pieces. The tube is next to be warmed up to the boiling point of water, so that any moisture that may still be present shall be driven off. The heat should be first applied at the occupied end, and the water as it condenses be heated so as to leave the tube entirely. If the condensing fluid be discolored by the presence of empyreumatic matters, this part of the process must be managed with great care, so that the copper be not subjected to too high a temperature. All moisture having been expelled, the tube is to be allowed to cool down, and is afterwards to be brought again into contact with heat, to sublime the arsenious acid.

The pointed end is first to be heated to approaching redness, care being taken that the aperture be not closed thereby, and the tube is then to be slowly moved through the flame until it warms each part in succession, as far as the enclosed metal extends. The temperature at which the sublimation takes place is 380° Fah., which should not be much exceeded. If the process has been well managed, and arsenic be present, it will be found in the form of arsenious acid, occupying a position around the tube about half an inch beyond the copper strips. The part of the glass surrounding the strips will be stained by a whitish opalescent film, which when the heat has been carried high becomes green; it is a salt of copper, as is proved by the action of the ferrocyanide of

potassium. This stain does not in any way interfere with the test. The metallic copper is encrusted with dioxide.

The arsenious acid of the ring is formed by the action of the oxygen of common air, which, as it passes over the heated metal, combines with any arsenic present. It collects on the nearest cool place, in the form of minute octahedrons of a remarkable brilliancy. The crystals are much more characteristic of arsenic than the reduced metal, which may be counterfeited by many substances. The smallest amount of the acid that can be satisfactorily recognized is the $\frac{1}{500}$ of a grain. In examining it, the tube should be first cut immediately below the ring, and the deposit viewed with a magnifying glass at the open end near the crystals; in this way the influence of the refractive power of the tube can be avoided. The production of arsenious acid from the metal is also advantageous, inasmuch as the bulk is increased in the ratio of their equivalents, or as 75.34 to 99.34 (AsO^3). The field covered by the crystals is also larger than that which would be occupied by the reduced arsenic. There is no sublimate which can rise under the preceding circumstances, that will in any way embarrass the operator.

Arsenious acid thus obtained forms a perfect evidence, and none other will be desired by the chemist. But in medico-legal questions it is proper to collect it, and use the other tests, so as to remove all doubt from the minds of the jury. The best way to collect the acid, is to cut the tube with a file, immediately above and below the ring, and pound up the whole in a mortar of sufficient hardness. The particles of glass cannot interfere with any test to be used. * A portion of the powder thus obtained should be digested in pure water, and tested by ammonia-nitrate of silver, sulphuretted hydrogen, &c. Another part may be reduced with charcoal, and a third portion intoduced into Marsh's apparatus.

In examining the delicacy of the foregoing process, it was found that one part of metallic arsenic in 200.00 parts of fluid can be detected, and $\frac{1}{500}$ gr. sublimed and satisfactorily recognized. Mr. Brett (Lond. Ed. and Dub. Phil. Mag., No. 132) did not succeed in detecting less than 00469, or nearly $\frac{1}{213}$ gr. of metal, by Marsh's apparatus. M. Riench considers the discoloration of the copper as a sufficiently delicate test for arsenic, but in my researches the color of the deposit did not appear so perfect a means of discrimination as the production of the sublimate of acid. Its adamantine lustre and triangular facets are much more distinctive; the ease with which it can be volatilized—its rising without previously fusing, are all characters rarely met amongst chemical substances, and are, collectively, common to no other body. The length of time requisite to conduct an analysis up to the production of the sublimate, when the solution does not offer any cause of delay, does not exceed five minutes, for a small quantity. But the presence of other metals in the solution, as well as the impurities of commercial muriatic acid, are sources of embarrassment which it is necessary to examine before this test can be recommended to the profession. This inquiry forms the third division of our subject.

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* It should always be remembered that glass not unfrequently contains arsenic, which is used in its manufacture as a deoxidizing and decoloring agent. Every sample of glass to be employed in toxicological experiments, should therefore be carefully examined to prove its purity.—Eds.

3. Arsenic exists in many specimens of hydrochloric acid met with in commerce. Such an adulteration is fatal to the delicacy of Riench's test; and the acid used in the foregoing process must be first carefully examined and purified. The method recommended by M. Riench for this purpose is the best—boiling the acid along with bright copper strips, as long as they continue to be stained with arsenic. The quantity of acid must be in proportion to the amount of fluid; there is no danger of using too much. But the presence of remedial agents in the suspected mixtures is a source of much more difficulty. In the November number for 1829 of the American Journal of the Medical Sciences, there is an exceedingly important paper by Samuel Jackson, late of Northumberland County, Pa., on a case of suspected poisoning, which shows how necessary it is to know what substances are present in the fluid submitted for examination, before forming an opinion. Four highly intelligent physicians appointed a committee by the coroner for the examination of the contents of the stomach, &c., of a person recently deceased, drew up a report to the effect—that he had died from the effects of arsenic, when none of that drug existed in the matters analyzed. This serious error arose from the presence of tartar emetic and common salt, combined with the color of the fluids. The tests used were sulphuretted hydrogen, ammonia-sulphate of copper, ammonia-nitrate of silver, and the production of the arsenical alloy with copper. The action of all these reagents on the suspected mixtures, was examined by the side of their effects on a solution of arsenious acid, without detecting the error. But notwithstanding this, and a certain amount of moral evidence produced against the accused, it has been made clear by Dr. Jackson that none of the poison was present.

Of all the substances which may be met with in the matters examined, the salts of antimony give rise to the most serious difficulties. If sulphuretted hydrogen or Marsh's test be used, it is impossible to distinguish between arsenic and antimony, when both are present in certain proportions. It is therefore of the first importance, that this and other similar sources of error should be removed, so as to present to the jury a satisfactory report.

The metallic substances to be expected, whether in broths, medicines, or the contents of the stomach, &c., are the sulphates of copper and zinc, acetate of lead, nitrate of bismuth, corrosive sublimate, calomel, tartar emetic, and nitrate of silver. Of these the salts of silver and lead are precipitated by the addition of sufficient hydrochloric acid, and therefore do not interfere with the test. The sulphate, and other compounds of copper and zinc, do not exert any action in this case. But bismuth, mercury, and antimony, attack the copper strips as well as arsenic.

Bismuth.—Upon the addition of hydrochloric acid to the nitrate, a sub-nitrate is precipitated, but afterwards dissolved by the acid. From this solution is produced, almost immediately, a pinkish grey deposit of a crystalline texture, when clean copper is introduced. The reduced bismuth accumulates on the strips until it drops off. But the presence of this metal does not hinder the reduction of the arsenious acid, so that they are both thrown down together, the only inconvenience being that more copper is required, and care must be taken that the arsenic be not lost by the falling off of the deposit. If both agents be present, the character of the precipitate upon the copper cannot be considered as a test at all, for it will differ with the proportion of either. But by carry-

ing on the process to the second step, the separation becomes perfect, for the arsenious acid sublimes away, and the bismuth remains at the lower end of the tube. In this way, $\frac{1}{500}$th grain of arsenic mixed with $\frac{1}{100}$th grain of nitrate of bismuth was clearly recognized after sublimation. This impurity is not, however, often to be expected in the fluids under consideration.

Antimony.—The entire separation of this substance from arsenic, by the method proposed, forms one of its chief advantages. If tartar emetic be present, it will not in any way affect the copper until hydrochloric acid is added. The first consequence of the introduction of the acid into the fluid, is the precipitation of the oxide of antimony, which it afterwards dissolves. From this solution the metal is rapidly deposited in the form of a grey crust, very much resembling that formed when arsenic alone is present in small quantity, but unlike the latter substance there is no darkening, or falling off of the antimonial crust. It is an exceedingly delicate test for antimony alone; but when arsenic is also present, the appearances depend upon the proportion of one to the other.

In subliming, arsenious acid is separated; this takes place at 380° Fah., long before the fusion of antimony at 800° Fah., which is nearly a red heat. In the case before us, more care than usual must be devoted to the heating of the tube, so that the melting point of antimony be not exceeded. This furnishes us with an additional argument in favor of carrying the process to the second stage, before an opinion can be formed upon sufficient grounds.

Mercury acts much more readily on copper than any of the preceding metals. If corrosive sublimate be present in the solution, it attacks the strips without assistance of any acid. The deposition of mercury takes place without heat, but boiling hastens the process. Under these circumstances, arsenic does not fall down, however great the quantity present. The mercurial deposit is at first grey, and afterwards, as the amount increases, presents all the physical characters of the metal, so that it cannot be mistaken for any other substance. But when the quantity in solution does not exceed one part in fifty thousand of the fluid, it will not fall until hydrochloric acid and heat are added—conditions under which arsenious acid also is reduced. So that mercury can be separated from a solution, except a small quantity, without disturbing the arsenic; but if the amount be very minute, both metals fall down, and the character of the stain is no longer a test. The presence of corrosive sublimate is however rarely to be expected, since it is the more active poison of the two; but the test under consideration may be used for the detection of mercury, as well as arsenic and antimony. Calomel may be looked for in many instances; and although it will not be found in fluids, yet in those cases where the coats of the stomach are macerated in dilute hydrochloric acid, for the solution of arsenious acid, it will also be dissolved and converted into corrosive sublimate. But this is not so great an inconvenience as might appear at first sight, for by sublimation the two substances are entirely separated from each other.

Introducing the copper strips coated with both metals into the subliming tube, and heating, the mercury will rise in the metallic form, and the arsenic as arsenious acid. The extremity of the tube surrounding the copper will not be stained green, as already stated, but be colored with the orange oxide of mercury. A microscopical examination of the

sublimate will quickly decide the question whether any arsenious acid be present; for its octahedral form and transparency contrast strongly with the spheres of opaque mercury. In these cases it is best to dissolve the acid away from the metal, by boiling the whole sublimate in pure water and testing again, before an opinion is given.

The results of the examination made on this subject, may be condensed under the following heads.

1st. In consequence of the occasional failure of Marsh's test, as shown by Messrs. Danger and Flandin, and the length of time necessary to carry on the process, when minute quantities of arsenic are present, it has become a desideratum to possess some more certain means of collecting the poison out of solutions. The process recommended by M. Riench is the best yet discovered; but it is not a good test for the metal, because many other substances produce deposits which resemble that of arsenic to a great extent. *But by subliming always from the precipitate collected, the test is increased in value and certainty.*

2d. When solids or coagulable substances are submitted for examination, the addition of dilute hydrochloric acid is recommended as the most promising means of dissolving out the arsenious acid.

3d. Copper strips should be added until no stain is produced after thirty minutes' ebullition.

4th. Antimony and mercury are the only probable sources of embarrassment. The first is separated from the mixed precipitate by never raising the heat to 800° Fah. Large quantities of Mercury are first removed by the action of copper alone; and when it is mixed with arsenious acid in the sublimate, the solution of the acid by pure water separates it from the metallic globules.

5th. The simplicity of the manipulation and the certainty of the result, are exceedingly strong recommendations. But the facility with which a large number of examinations can be made with only a small quantity of matter, is the most valuable feature of the process. If all the operations are conducted in small tubes, an ounce of the suspected fluid will be sufficient to yield ten or more portions of sublimate.

6th. All the difficulty and loss of collecting common precipitates are removed by using the test, and it is liable to fewer sources of failure than those already known.

In view of these advantages Riench's test is recommended to the profession as a valuable contribution to toxicology.

ART. VI.—*The Ganglionic System of Nerves.* By MOSES GUNN, M.D., of Ann Arbor, Michigan. An Inaugural Thesis, etc.

(Concluded from page 332.)

The Functions of the Ganglionic Nerves.

IN doing this we must reason from analogy, and satisfy ourselves with negative evidence, for we cannot here, as in proving the functions of the Cerebro-spinal system, isolate completely the organs from nervous influence.

In vegetable we have the phenomena of organic, distinct from that of

animal life. Here we have the phenomena of imbibition, circulation, and assimilation. Here we have no animal life, and here no central nervous system; but we have a ganglionic system which presides over and regulates this process of vegetation. This same nervous system we see now fully developed in the lower order of animals, where imbibition takes place from the surface of an alimentary canal, and where to circulation and assimilation we have added the function excretion. This system, too, we see wherever there is nutrition developing itself as new functions are added, and accommodating itself to every form of organic life, from that which springing in a night withers in an hour, to that which creative wisdom was pleased to form in his own image.

If, then, wherever we find life, we find this system of nerves, what are we to conclude? Are we to suppose that its functions are different in the vegetable from its functions in that form of organic matter which is raised but a single notch above it in the scale of being? If not, then are we to suppose that its functions are altered at any point in that scale, except that they are amplified as the being is perfected? Rather does not analogy teach us that its functions are the same throughout nature, and that whatever are its functions in the vegetable, they are the same in the animal?

Be this reasoning true or false, the principle it would establish receives support from some of the freaks of nature. M. Brachet details two cases, one mentioned by Professor Meyer of Berlin, of a fœtus where not a trace of the cerebro-spinal system could be found. Another from Morgagni, of a full grown fœtus, well formed with the exception of the brain and spinal cord, which were entirely wanting.

In both these cases the development must have been from the ganglionic nerves alone. Both possessed vegetable life, and nothing more. Anatomy, too, we have found supporting this position. We have seen that the principal organs concerned in nutrition, are almost exclusively supplied by nervous influences from the ganglionic system, and the scalpel shows that filaments from this system are sent along the arteries, maintaining their size by ganglionic enlargements to every part of the system, so that whenever we have a particle to be absorbed, and its place refitted, we have there a filament from the ganglionic system to perform the work. Let us seek for evidence in favor of this opinion by considering the special functions of this system of nerves, or its influence over the several organs concerned in nutrition, and here let me repeat what I have before said, that we must satisfy ourselves with negative evidence. And why should we not? If we isolate completely an organ from cerebro-spinal influence, and still its proper functions are performed, it furnishes clear and conclusive proof, that the performance of those functions is independent of that influence; and though of a negative kind, it furnishes evidence equally clear that it receives its influence from another source, and that source can be none other than the ganglionic system, the influence of which let us consider upon the function of

Respiration.

It is in respiration that we see the union of the two lives, organic life and the life of relation. Inspiration and expiration are the functions of the latter, while excretion and the chemical changes wrought in the lungs are the work of the former.

The diaphragm and the external muscles of respiration, the servants

of animal life in this function, are controlled by cerebro-spinal influence, while the vital action within the lungs, we suppose to be the result of ganglionic influence.

In support of this supposition, let us call in the aid of anatomy. We have seen that the pulmonic plexus is formed principally by filaments from the pneumogastric nerve, that the anterior pulmonic plexus is composed entirely of filaments from this nerve, and its recurrent branch, but that passing down behind the branches, this nerve enlarges and assumes the *pearly tint* of the *sympathetic*, that at *this point* it gives off branches to join those from the three superior thoracic ganglia, and thus form the posterior pulmonic plexus, while the remainder of the nerve passes on to the stomach.

It will be recollected, too, that we saw upon the trunk of this nerve, a ganglion which communicated with the other ganglia, and directly with the superior cervical ganglia of the sympathetic.

This ganglion, of course, imparts to the nerve, or a portion of it, the peculiar property of ganglionic nerves. This nerve, too, gives off branches both of motion and sensation; its superior laryngeal branch is a nerve of sensation; its recurrent branch is a nerve of motion. Thus we see this nerve contains three kinds of filaments, viz. sensitive, motor, and ganglionic. That they are not ganglionic, we believe, because they are not given off at the enlargement, and have not the appearance of ganglionic nerves.

That they are not motor, we believe, because we must have sensitive nerves in the lungs, to convey to the brain the necessity of respiratory movements; or in other words, we must have excito-motor nerves in the lungs, and the other portion of the plexus is composed of branches from the recurrent or motor nerve. This second portion of this plexus being motor, we need to control the contractions of the bronchi during expirations. Thus we have disposed of the anterior pulmonic plexus, and we proceed to the consideration of the posterior. This plexus is composed, in part, of branches from the enlargement of the pneumogastric, where the nerve assumes the pearly tint of the sympathetic. These branches we conceive to be ganglionic, from their origin, appearance, and union with the branches composing the remainder of the plexus, viz., the filaments from the three superior thoracic ganglia of the sympathetic. Here, then, we have a ganglionic plexus, which sends filaments to every part of the lungs. Now what is the function of this plexus? We have inspiration and expiration, performed by cerebro-spinal influence. We have contraction of the bronchi, from the anterior pulmonic plexus, and we have sensation from the same source. Now, what function remains for the posterior pulmonic plexus to control, entirely which, we *know*, is formed in part, and have good reason to believe of ganglionic nerves? Obviously *Excretion*, and the *Chemical Changes*.

Now how do the changes observed after division of the pneumogastric bear upon this view of the pulmonic plexus? Let us see. On division of the pneumogastric, death ensues in eighteen or twenty-four hours from an engorged state of the lungs, with venous or unchanged blood. The bronchi, too, we find clogged with mucus. Now we have made the pneumogastric to supply the greater portion of filaments forming the plexus, which we imagined to preside over excretion, and the

chemical changes. We have ascribed it to the nervous influence which produces contraction of the bronchi. Now let us again look at the cause of death after division of the pneumogastrics; a contributing cause is the clogging of the bronchi with mucus.

During inspiration, the bronchi remain in their natural or dilated state, thus affording a free and open passage to the air. During expiration, we have the contraction, which, lessening the diameter of the bronchi, causes the air to pass along these tubes with increased force.

It is this increased force of expiration that clears the bronchi of mucus. Thu swe see that when the bronchi remain dilated during expiration, as during inspiration, the air passes with equal force either way, carrying the mucus into the lungs during inspiration, as it does towards the trachea during expiration. It is then from the suspension of this contraction, that we have the clogged state of the bronchi.

Now let us look at the chief cause of death, viz., the engorgement of the lungs with nervous blood.

Death, we have said, ensued in eighteen or twenty-four hours. Now could we isolate completely the lungs from that nervous influence, on which depends the purifying changes of the blood, death would as speedily follow as if the animal were placed within a vacuum, or plunged beneath the surface of water.

But as after the division of the pneumogastric nerves, the animal does not thus speedily die, it is evident that the lungs still receive nervous influence, though not in sufficient quantity to support life for any great length of time. Whence this influence? From the superior thoracic ganglia, which send filaments to assist in performing the posterior pulmonic plexus. Thus we see that the functions of a portion of the pneumogastric are the same as those of the sympathetic, and that the plexus formed from each presides over the purifying changes of the blood in the lungs.

We next proceed to a consideration of the

Influence of the Ganglionic System on the Heart.

In the function of respiration we saw blended the two lives: in that of circulation, though performed principally by a central muscular organ, complicated in structure, and precise and regular in its motions, we see but one, and that the perfection of organic life.

It is here that we see organic life so closely approaching the life of relation, that we almost start at the perfection, and seek for it a place higher in the scale of being. Yet perfect as it is, and assuming as it does a form so closely resembling animal life, it is still independent of the animal and beyond his control. Remove entirely the brain, and by producing artificial respiration, the heart still continues to pulsate, sending the blood its accustomed rounds. When the animal is thus dead, the heart still lives keenly sensible to its proper stimulus.

In this *sensibility* it asserts its claim to animal life. But the sensibility on which this claim rests, is only of a peculiar kind, and not that which is conscious of touch, but sensible only to its peculiar stimulus, the blood. It is probably derived from the nerves of animal life, for we have seen that the pneumogastric contributed filaments to the formation of the cardiac plexus, and although in the reception of these filaments, and the possession of this kind of sensibility, it is raised above simple organic life, its independence of animal life assigns it its place at the

head of the former, under the control of the ganglionic system. That it is controlled by this system admits of direct proof. M. Brachet instituted a series of experiments to elicit this fact. After removing the brain, taking care to produce artificial respiration, dividing the spinal cord and pneumogastrics in three several experiments, and finding that the heart still continued its movements, he proceeded to the following experiment, which we give in his own words.

"On a young dog I placed a double ligature as near as I could to the origin of the left subclavian. Then dividing the artery between the two ligatures, I exposed the cardiac nerves, traced into the chest, turned back the first rib by disarticulating its sternal extremity, and arrived by degrees at the cardiac plexus. When I thought I had it isolated, I carried the scissors into the wound, and divided the plexus. The circulation, which but an instant before went on perfectly well, was at once arrested, the heart ceased to contract, the animal became convulsed and died. I opened the chest, and the examination of the parts satisfied me that the cardiac ganglion was perfectly divided, so as to isolate the nervous filaments which proceed from it, to form the cardiac plexus." Thus we see that though the cerebro-spinal system be left untouched, if we deprive the heart of ganglionic influence, its motions instantly cease.

Having now seen that the motions of the heart depend upon ganglionic influence, let us proceed to a consideration of the

Influence of the Ganglionic System on the Abdominal Viscera.

In doing this, let us again refer to its anatomy. We have seen that constituting the prævertebral portion of this nerve in the abdomen, we have the semilunar ganglia, and solar plexus, from which, as from a common centre, radiate nerves to the different organs of this cavity. With the exception of the alimentary canal, the upper portion of which receives the influence of the pneumogastric, the abdominal viscera receive their nervous power from the ganglionic system alone. The functions of these organs, then, we are led to believe, are controlled by nervous influence from this source; but that the secretion of the kidney, or pancreatic or biliary secretion, depends solely on this source for nervous power, we can neither directly nor indirectly prove.

So deeply situated are the organs, and so extensive are their nervous connections, that it would be impossible to isolate a single organ from nervous influence.

But though nothing can be *proved* respecting the influence of the ganglionic system on these organs, we can arrive at legitimate conclusions. We see that the organs receive nerves, and as we cannot believe they are useless, we *must* conclude that they preside over and control the functions of the organs to which they are sent. But the stomach receives nerves from another source, viz., the pneumogastric. Let us see what influence this nerve exerts over its functions. In the stomach we have the secretion of the gastric juice, and the peristaltic motion by which every portion of the contents is brought successively in contact with its surface, and by which, when chymified, it is expelled.

In the stomach, too, we have the sensation of hunger and satiety. We should naturally expect the pneumogastric was the source through which the brain received the latter sensations; but whether either of the other functions of the stomach is governed by this nerve, we well

might hesitate about deciding without some experiments, to which for the solution of our doubt let us appeal. M. Brachet has made some interesting experiments with regard to this subject.

First, with respect to hunger,—he made a spaniel to fast for twenty-four hours, and then divided the pneumogastrics below their recurrent branches. The animal no longer sought for food, but when it was given him he continued to eat, till he was unable to swallow, the œsophagus being full. In his next experiment he made two cabias to fast for eighteen hours. They sought food in every direction, and uttered cries indicating their hunger. He then divided the pneumogastrics, taking the precaution to make an opening in the trachea. He then placed before them a kind of food, which they had before devoured with great avidity. They lay down without noticing it. He then placed it under their noses, when they ate, but with a sort of indifference. He then fed them by separate pieces; they ate till deglutition became impossible.

His next experiments were made upon these nerves with reference to digestion. After making a dog to fast for twenty-four hours, he satisfied him with meat; immediately after, he divided the pneumogastrics; ten hours after, he killed the animal, when he found the stomach distended, and the small intestines empty. On opening the stomach he found the alimentary mass unchanged except on the surface, which was converted into a layer of greyish mucous chyme. After a fast of fifteen hours, he made an old horse eat a quantity of oats. The pneumogastrics were then divided. Eight hours after the animal was killed by introducing air into the jugulars.

The stomach, which was distended with the oats he had eaten, on being opened, presented the grains on the surface, in a half digested state, while those occupying the centre were unchanged. The lacteals were empty. These experiments, which were many times repeated, uniformly presented the same results, the sensation of hunger and satiety, and also the peristaltic motion of the stomach, being destroyed by division of the pneumogastrics.

The result of the first of these experiments was just what we would be led to suspect, for hunger and satiety, being impressions made upon the stomach by the absence or presence of food, if we cut off the only communication between it and the brain, the brain no longer takes cognizance of those impressions, any more than after division of the spinal cord, it does of certain impressions made at the other end of the alimentary passage. In the other experiments, we see that though motion was destroyed, the stomach still continued to secrete the gastric juice, and the process of chymification was completed on that part of the alimentary mass, which, from its situation, could be acted upon by this secretion. Motion of the stomach, then, is a function of the pneumogastric, and secretion of the gastric juice depends on the *ganglionic system.*

We have yet to consider the influence of this system on the functions of generation, capillary circulation, and exhalation. This we shall do very briefly. In studying the anatomy of the sympathetic, we saw that the spermatic nerve constituted one of the radiations of the solar plexus.

These nerves, as their name indicates, supply the testicle, and afford to it most of its nervous power. It, however, receives from the hypogastric plexus, which is composed of branches from both systems, a

few additional filaments. It is probably from this source that the testicle derives its exquisite sensitiveness, and not the power of secretion.

This we believe is conferred upon it by the ganglionic system, through the spermatic nerves; and, in support of this view, we merely refer to the numerous cases of paraplegia in which this function is not suspended, and mention one from M. Brachet, of a soldier who, for eight years, suffered from paraplegia. In the inferior extremities, and in the lower fourth of the abdomen, both sensation and motion were entirely lost. The spermatic secretion was perfect, erection took place, and during the period, he became the father of two children.

Let this suffice for this function, and in reference to the remaining two, capillary circulation, and exhalation, we need only refer to the numerous every day examples of both—hemi and paraplegia, where, though the cerebro-spinal influence is entirely suspended, we have still uninterrupted, the capillary circulation and cutaneous exhalations. Whence the power that presides over these functions, when animal life is thus abolished? We can have but one answer, the *ganglionic system.*

In thus summarily disposing of the last three functions, we have not overlooked their magnitude, or mistaken their importance. We are well aware that they alone afford subject matter for a respectable thesis, and that in them we have most powerful arguments in support of our position.

But in a paper like this, we would avoid tedious length, and aware that a few selected arguments are as efficient as the whole array, we leave the subject.

ART. VII.—*Statements and Remarks on Yellow Fever.* By H. W. VAN HOVENBERG, M.D., Quarantine Physician to the Port of New York.

THE records of the New York quarantine furnish ample proofs of the importation of a malaria capable of producing yellow fever.

Every year there is more or less yellow fever in our hospitals; many of the cases admitted are sick on their arrival, but it is not uncommon for others to sicken while performing quarantine; and vessels have arrived here—from ports where yellow fever was known to have existed at the time of their departure—with all on board in good health, and after lying at quarantine ten or fifteen days, yellow fever has broken out among the crew; and persons from the shore, employed to discharge and cleanse such vessels, have died from black vomit in the hospital.

You ask me for facts. The following are taken from the Hospital Register; they have all occurred under my observation, and I can vouch for their correctness. From the imperfection of our register they may not be as full as you desire.

Case of the British brig of war Buzzard.—The Brig Buzzard arrived at the quarantine ground, Staten Island, about the middle of June, 1838, from the coast of Africa; the coast was sickly, and they had lost a number of men there, but the crew were all in good health at the time

of their arrival. The vessel, being from a sickly port, was placed in quarantine for thirty days. On the third of July, fifteen or twenty days after their arrival, a man died on board after two days' illness. (He was reported to the Health Officer by the surgeon of the vessel, Dr. Roberts, as having poisoned himself by swallowing tobacco to avoid doing duty on board the ship.) On the following day the vessel was visited, and one of the crew sent to the hospital; in ten days thirteen of the crew were admitted with yellow fever. The following are the names and dates of admission:—

July 4th, Michael Tobin,
" 5th, Crosby Lovett,
" 6th, Robert Haggerty,
" 8th, Thomas Lewis,
" " Thomas Dyer,
" " Thomas Mavid,
July 9th, Lieut. Walter Pollard,
" 12th, Henry Seymour,
" " Midshipman Floyd,
" 13th, Thomas Jones,
" 14th, John Coward,
" " Martin Hough,
14th, John Willmott.

Two of these died, Crosby Lovett on the 10th of July, and Thomas Lewis on the 13th, with black vomit. Lieut. Pollard had black vomit, but recovered.

On the 14th of July, the crew were all landed, and remained on shore about six weeks, during which time the vessel was thoroughly ventilated and cleansed. The Buzzard sailed for Europe in October.

Case of the pilot boat La Fayette.—The pilot boat La Fayette was chartered for Havana. She remained in that port ten days in the month of June, 1838, and returned to New York without taking any cargo. At the time of her arrival at the quarantine the crew were all well, and there had been no sickness on board while in the port of Havann, or during the passage. The vessel was placed in quarantine for thirty days; persons who had not been to sea with her took charge of her, and while engaged in moving the ballast, whitewashing the hold, &c., four of them sickened with yellow fever.

Joseph Lockman, a pilot, died with black vomit, in the city of New York.

Jas. Britton, a pilot, had yellow fever, and recovered.

Isaac Oxer was admitted into Marine Hospital June 29th, and died with black vomit July 3d.

John Oxer was admitted July 8th with yellow fever; he recovered.

Case of the ship Gustave Edouard.—Statement of Capt. Negret, taken on her arrival at the quarantine, July 23, 1843.

The ship Gustave Edouard, from Havre, arrived at St. Pierre Martinique in June, discharged cargo, and took in ballast *from the water.* The vessel remained in the port eighteen days, and sailed for New York July 9th. The captain obtained a clear bill of health, and was assured by the physician who granted it, that the island was entirely free from yellow fever. The crew were all well when the vessel sailed, but on the second day out the cook was attacked with fever, and died July 19th, four days prior to the vessel's arrival.

Two men were sent to the hospital, both well marked cases of yellow fever. The vessel was placed in quarantine for thirty days; while engaged in cleansing the vessel, several of the crew sickened and were sent to the hospital—one of them died with the black vomit.

Chas. Terrein, admitted	July 23d.	Discharged	August 1st.
Guillaume Jean, "	" "	"	" 20th.
Paul Perron, "	" 31st.	Died	" 6th.
Balthasar Bulot, "	August 2d.	Discharged	" 7th.
Bulot relapsed and was re-admitted	Aug. 17th.	"	Sept. 1st.
Louis Put, admitted	August 19th.	"	" "

Case of the brig Growler, from New Orleans.—Statement of Capt. Spear on arriving at the quarantine ground, Staten Island, Aug. 9th, 1843.

The brig Growler sailed from Boston, May 14th, 1843, bound to New Orleans. Arrived there June 12th, discharged cargo, &c. Immediately on the vessel's arrival, four men were paid off and discharged. The remainder of the crew enjoyed good health while at New Orleans; and I heard of no sickness among the shipping or in the city. The vessel took in a cargo consisting of wheat, pork, lard oil, &c.; and sailed July 10th for New York. On the day of sailing, shipped four men instead of those discharged. All continued well until *July 27th*, when three of the seamen sickened with the usual symptoms of fever; and on the 30th July, not one of the men was fit for duty. One of the men that sickened first, died July 30th, and another on the 31st July. The vessel went inside the breakwater Aug. 4th, she being leaky and the pumps choked. Having had a survey, sailed Aug. 6th from thence for New York.

(Signed) JOHN SPEAR.

The following cases of yellow fever were admitted into Marine Hospital from brig Growler:

Aug. 9th, John Brown.		Discharged Aug. 15th.
" 13th, John Hart.		" " 25th.
" " Robert Havinu.	(Mate.)	" Sept. 1st.
" 16th, John Spear.	(Captain.)	Died Aug. 21st.

Samuel Hopkins, captain of the lighter Daniel Barclay, while employed in lightening the cargo of the brig Growler to the public stores at quarantine, was attacked with yellow fever; he was admitted into the hospital, Aug. 28th, 1843, and died with black vomit Aug. 31st. Hopkins had very imprudently and unnecessarily gone into the hold of the brig, and remained there about twenty minutes.

Case of James Harcourt, M.D.—Dr. Harcourt, while in the discharge of his duties as Deputy Health Officer, was frequently on board of vessels from sickly ports; he was attacked with yellow fever Aug. 28th, 1843, his disease was well marked.

Case of M. H. Van Dyke, M.D., Assistant Physician.—Dr. Van Dyke was attacked the afternoon of the day on which Dr. Harcourt sickened, Aug. 28th. The Dr. had not been on board of any vessel from a sickly port; he must have taken the disease either from his close attendance on the numerous cases of yellow fever in the hospital, or from having been in the public store where the cargoes of the infected vessels were ventilating.

Case of the barque Eugenia, from Vera Cruz.—The Eugenia arrived at quarantine ground, Staten Island, Aug. 10th, 1844, after twenty-six days' passage from Vera Cruz.

Two passengers, one of whom had been ill two, the other three days, were sent to the hospital with yellow fever.

D. Pedro La Fonque was discharged Aug. 21st. Mathias Clasar died Aug. 12th, two days after he was admitted.

C. G. Wallace, captain of the lighter engaged in discharging the cargo of the Eugenia, was admitted into the hospital with yellow fever Aug. 28th, 1844, and died Sept. 10th. A well marked case of yellow fever.

ART. VIII.—*Case of Doubtful Sex.* By WM. JAMES BARRY, M. D., of Hartford, Conn.

IN March, 1843, I was requested to examine the case of Levi Suydam, aged 23 years, a native of Salisbury, Conn. At the exciting and warmly contested election of the spring of this year, almost everything bearing the semblance of the human form, of the male sex, was brought to the ballot-box. It was at this time, and under these circumstances, that the above mentioned person was presented, by the whigs of Salisbury, to the board of Select-men, to be made a freeman; he was challenged by the opposite party on the ground that he was more a female than a male, and that, in his physical organization, he partook of both sexes.

The following was the result of the first examination. On exposing his person, I found the mons veneris covered in the usual way, an imperforate penis, subject to erections, and about two inches and a half in length, with corresponding dimensions, the dorsum of the penis connected by cuticle and cellular membrane to the pubis, leaving about one inch and a half free, or not bound up, and towards the pubic region. This penis has a well formed glans with a depression in the usual place of the meatus urinarium, a well defined prepuce, with foramen, &c. The scrotum not fully developed, inasmuch as it was but half the usual size, and not pendulous. In the scrotum, and on the right side of the penis, one testicle of the size of a common filbert, with spermatic cord attached. In the perineum, at the root of the corpora cavernosa, an opening through which micturition was performed, this opening large enough to admit the introduction of an ordinary sized catheter. Having found a penis, and one testicle, though imperfectly developed, and without further examination, I gave it as my opinion, that the person in question was a male citizen, and consequently entitled to all the privileges of a freeman.

On the morning of the 1st Monday in April (Election day) I was informed that Dr. Ticknor would oppose Suydam's admission. Suydam came forward, Dr. Ticknor objected. I then stated to the meeting, that from an examination I had made, I pronounced the person in question to be a male, and requested that Dr. Ticknor might, with the consent of Suydam, retire into an adjoining room, and examine for himself. This was done, when Dr. Ticknor stated to the meeting that he was convinced that Suydam was a male. Suydam accordingly was admitted a freeman—voted—and the whig ticket carried by one majority!

A few days after the election, it was told me that Suydam had regular catamenia. I then commenced further investigations, and learned from Mrs. Ayres, the sister of Suydam, that she had washed for him for years, and that he menstruated as regularly, but not as profusely, as

most women. I next saw Suydam, who very unwillingly confessed that such was the fact. I then requested him to meet Dr. Ticknor and myself the next day at my office; when the following additional particulars were elicited. Said Suydam is five feet two inches in height, light colored hair, fair complexion, with a beardless chin, and decidedly of a sanguineous temperament, narrow shoulders, and broad hips; in short, every way of a feminine figure. Well developed mammæ, with nipples and areola. On passing a female catheter into the opening through which micturition was performed, and through which, he again stated, he had a monthly, periodical, bloody discharge, instead of traversing a canal and drawing off urine, the catheter appeared to enter immediately, a passage similar to the vagina, three or four inches in depth, and in which there was considerable play of the instrument. He stated that he had amorous desires, and that, at such times, his inclination was for the male sex; his feminine propensities, such as a fondness for gay colors, for pieces of calico, comparing and placing them together, and an aversion for bodily labor, and an inability to perform the same, were remarked by many.

I further learned from an old lady who was present at the birth of Suydam, that on the second day after his birth, Dr. Delamater, who attended as accoucheur, made with an instrument, the opening through which he has ever since performed micturition.

ART. IX.—*Extracts from the Recorded Proceedings of the New York Medical and Surgical Society.*

REGULAR MEETING—MAY 16, 1846.

DR. POST stated that the patient whose case he had reported at a previous meeting, and whose thigh had been amputated, had since died. He had cough, hectic, purulent expectoration, and all the symptoms of tubercle, but the principal cause of death was a *bed-sore*, which existed before he entered the hospital. On examination the upper lobe of one lung was found inflamed, and contained two cavities, the size of a bean, filled with pus; only one or two small tubercles were found. There was a question whether the abscesses were tubercular or metastatic. There was no affection of the veins. Dr. P. also reported a case where alarming symptoms were produced by *Iodide of Potassium*. The patient was a lady, aged 22, who had an enlargement of the uterus. She was ordered a solution containing ʒj. to ʒvj. water, a table-spoonful three times a day. After two doses she complained of smarting and soreness of the throat. This was regarded as an effect of the weather, and she was directed to continue the medicine. She took the third dose, and soon after the soreness of the throat became very severe, and was followed by intense pain in the temples, great heat of skin, and nervous irritation. The features became very much swollen and distended, especially the upper lip; pulse 160, great dyspnœa, and the whole state of things alarming. Warm drinks and other remedies were given, which produced perspiration and sleep. A cathartic was administered, and in the course of three days she had recovered. The medicine had been put

up by Mr. Adamson, and was undoubtedly pure. Mr. A. had known similar symptoms to follow a small dose of Lugol's Solution. Instances were given by several members where ptyalism, conjunctivitis, nervous irritations, &c., had followed small doses of the remedy; also where very large doses had produced no effect whatever.

Dr. GARRISH stated, that the case of *uterine hemorrhage* reported at last meeting, had recovered without any unfavorable symptoms. The milk did not appear till the 18th day.

Dr. WHITE reported the case of a young lady, who was seized a few days ago with severe pain and tenderness in the abdomen, accompanied with faintness. Gave her an emetic, and afterwards bled her, and administered calomel and ipecac, with partial relief; to-day, a rheumatic inflammation appeared in the left knee. There was considerable diarrhœa and tenesmus. The question suggested itself whether this was a rheumatic inflammation of the bowels? Dr. W. had also seen a patient with a *tumor* about four inches long and two broad, in the right groin. It lay directly in the track of the inguinal canal, and appeared to adhere to Poupart's ligament. It was impossible to tell how far it extended internally. It commenced above eleven months since. The patient had become pregnant and borne a child since its appearance. There was slight tenderness, but the general health was good. Also a case of *hemorrhoids*, partly external and partly internal, which came down at every stool. Had applied *caustic potash;* the pain caused was severe, but no bad consequences had followed. The patient is considered cured.

Dr. SWETT stated the case of a young lady who had had, when a child, *rheumatic inflammation of the heart.* This spring she was seized with acute rheumatism, accompanied with dyspnœa. On examining the heart, a *friction sound* was heard over the apex, and there was a good deal of action, but no pain nor palpitation. Supposing that pericarditis existed, mercurials were ordered, but the physician in attendance discontinued them after a few days' use. A fortnight after, she was found in the same state; the mercurials were renewed, and after salivation was established, a perfect cure was effected. Dr. S. also reported the case of a child six years of age, who first had *rheumatism* of the knees and ankles, and was convalescent, but in a week afterwards was found to have extremely rapid pulse, and violent action of the heart. An examination furnished evidence of pericarditis and double pneumonia. The heart was also found to be considerably enlarged. She was put upon a mercurial course, and the pneumonia soon relieved. Ptyalism was kept up for two months, at the end of which time the rough sound of the heart was somewhat modified. The evidences of enlargement of the heart continue.

REGULAR MEETING—JUNE 6, 1846.

Dr. GARRISH stated the case of a man, a tailor by trade, who, while intoxicated, received *a blow on the head* from a bar of iron, which stunned him. He was able, however, to walk home, and had his head dressed by a surgeon. Suppuration ensued and the wound closed. Two months afterwards Dr. G. was called to him, and on examining the head, found the bone depressed. He was at the time laboring under pneumonia, from which he recovered. After his recovery he was

attacked with vomiting: there was no pain in the head, nor delirium, except to a slight extent at night. After the vomiting had existed a week, Dr. G. proposed to remove the depressed portion of bone. This was objected to by the family, and he was sent to the hospital, where he remained a week; the vomiting still continuing, after he came out, he soon after died,—about three months after the accident. On examining his head, the bone was found considerably depressed, the membranes beneath being thickened. There had also been some effusion of blood. The brain was softened on that side, and there was an effusion of sero-purulent fluid. Dr. G. exhibited the bone.

Dr. G. also stated a case of *Erysipelas after vaccination*,—spreading to the fingers and neck. The arm was twice its natural size—vesicles formed, and a fatal termination threatened. Dr. G. observed that he had, in several instances, found good effects from the application of cloths dipped in brewer's yeast, in Erysipelas.

Dr. Post gave an account of an operation performed by Dr. J. Kearney Rodgers, for *congenital occlusion of the vagina*. The patient was 24 years of age. There had been efforts at menstruation; the external organs were well formed, and half an inch of vagina existed. The uterus could be felt through the rectum. A catheter having been introduced into the bladder, and a finger into the rectum, an incision was made between them with the scalpel. The operation was continued in part by the handle of the scalpel, and of sufficient depth to admit the whole forefinger, when the cul-de-sac was reached. This was distinguished by fluctuation. An incision was now carefully made through the membrane. A thick dark fluid escaped. A sponge was then introduced to dilate the opening.

Dr. M'Cready stated that he was now affected with a severe catarrh, affecting especially the eyes, which had recurred regularly every year at the commencement of hot weather, for six or seven years back. It affects first the eyes, which are much inflamed and itch intensely; it then attacks the schneiderian membrane, and finally affects the bronchial. It ordinarily commences early in June, and continues till August. This year the whole of June was cloudy, and the attack did not occur till the 5th of July, almost the first clear and hot day.

Dr. Beadle reported that the case of *Chorea*, which he had cured by Fowler's Solution, had relapsed, and that the remedy had failed on a second trial. The *Oxide of Zinc* was now given successfully. There was much disturbance of the heart in the case, which was cured with the other symptoms.

Dr. Wilkes stated a case where the *Tincture of Aconite* had been taken by mistake, instead of *Tincture of Rhatany*. Two doses of 30 drops each were taken before the mistake was discovered, which produced coldness of the extremities, constriction of fauces, &c.

Dr. Foster reported a case, in which *a pin had been discharged by the rectum*, after having remained in the intestinal canal nearly five months, producing severe pains in different portions of the canal.

Dr. F. reported a cure of *Necrosis of the lower jaw*, in which a large portion of the bone came away at once.

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Dr. Wilkes stated having been called in consultation with Dr. G. to a lady who was then in *labor*. The lady manifested not a little surprise

that another physician should have been called. The labor had been tedious, but unattended with any other difficulty. She, however, was shortly confined, and was soon afterwards seized with convulsions, and expired after having but three or four. Dr. W. remarked that the lady had been bled about ℥xii. only. He had supposed that she had been bled more largely. Dr. W. expressed it as his opinion, that not only in this, but in similar cases, bleeding had not been carried sufficiently far to produce the desired effect.

Dr. VANDERVOORT stated that he had used the *Tinct. of Iodine, as an application to Hemorrhoidal Tumors*, with highly satisfactory effects in a case to which it had been applied.

Dr. POST reported a case of *Vesico-vaginal Fistula;* that the urethra was open, but much contracted; that efforts had been made to dilate it by the use of the catheter, but owing to the irritability of the parts, he was obliged to discontinue further efforts. The patient left the hospital, and after an absence of six months, returned: when, upon examination, he found the urethra nearly or quite closed. There was difficulty of retaining urine in the erect position, but was able to retain urine all night, and while in the recumbent posture.

Dr. BULKLEY reported that he had recently seen a case of *Syphilitic Chlorosis* in a male. The disease had been spoken of by Ricord. Dr. B. was unable to distinguish any bruit de soufflet. The treatment indicated in this, as in all cases of this description, was to continue the use of mercury, in some one of its forms, with chalybeates.

Dr. FOSTER stated that he had been called in consultation to a lady with *Uterine Hæmorrhage*. He found the patient exsanguineous. Os tincæ dilated 2½ inches, and capable of further dilatation. The woman was feeble and sighing; ergot had been given. The placenta was partially over the os, and was separated for an inch or two from its edge. Dr. F. advised the use of opium, stimulants, and application of cold. The next day reaction had been established, and hæmorrhage returned in gushes. The physician in attendance endeavored to turn the child, and to expedite labor. He succeeded in bringing down one leg; but relaxing his hold, the leg returned, when the head came down, and delivery was safely accomplished.

Dr. GRISCOM stated the case of a lady who died of *Puerperal Peritonitis*, after her first labor. She had aborted on a former occasion. At this time she had gone but six months. She had been long subject to pains about the hips, back, &c. Labor progressed well; the placenta came away in a reasonable time, and at the expiration of 48 hours, the pain set in. Pulse rose to 140, accompanied with great distension and excessive tenderness of abdomen, which was unallayed by the treatment, and terminated in death in seven days. *Autopsy.*—Within the cavity of the peritoneum was a copious effusion of lymph; one of the ovaries was enlarged, and contained coagula of blood; there was, also, extensive phlebitis of the uterus. Some of the veins were found to contain pus. The whole of the peritoneal coat of intestines, from the jejunum downwards, was softened, and loosened from its attachment to the muscular coat, so as to be stripped from it with great ease. These appearances confirm the modern theory of the essential nature of the disease, viz., an inflammation of the uterus, and especially of its veins.

Dr. GREEN read a paper on the use of *Nitrate of Silver* in acute laryngitis. (See last No. of Jour., p. 355.)

Dr. Bulkley mentioned a case of purpura in an infant, eleven months old, which was brought to his office for consultation by a medical friend. The child was pale, and of a cachectic hue, though not much emaciated, had several teeth, and was still nursing its mother, who was of a rather delicate constitution, but in ordinary health. The disease had first appeared a few days before, and was characterized by elevations varying in size from that of a large pea to that of a hickory nut, of a dark purplish color which was permanent under pressure of the finger, firm to the touch, and scattered more or less on the back and limbs, especially along the spine, with a few on the face and forehead, and one on the lower part of the right cheek about an inch and a half long and an inch broad, elevated and indurated, having the feel of a phlegmonous tumor, and painful to the touch. In some of the smaller elevations on the back, the purplish discoloration extended beyond the limit of the induration. The child's appetite was good, and its bowels said by the mother to be in good order in every respect. Dr. B advised the administration of a quarter of a grain of sulphate of quinine in solution, with about two drops of elixir vitriol, every three hours, to give it animal broth and wine whey, to bathe it in tepid water every second night, and to paint the elevations with the tincture of iodine. When seen at the end of three days, after this course of treatment had been carefully followed, its general health was much improved, the eruption had nearly disappeared, the large indurated tumor on the side of the face had very much diminished, and no new spots had appeared. The continuance of the quinine at longer intervals was advised, with nourishing diet and the warm bath. It was not seen again by Dr. B., and recovered so rapidly afterwards that the attending physician discontinued his visits in a few days more. There was no hæmorrhage from any part. Dr. B. remarked that he had never before met with a case of purpura of this form. It differed from *p. simplex* in being accompanied by induration and elevation, and from *p. urticans* in the absence of itching, as well as in the larger size of the elevations, and their location. The indurated elevations, as well as the circumscribed character of the spots, distinguished it also from *p. ecchymotica*, the form which receives its name for its resemblance to a bruise or the effects of a blow.

Dr. Horace Green read the following paper :—

Some time since I made a brief allusion before the society to the case of a clerical gentleman, who accidentally fell from the platform of a R. R. car, as it was passing over a bridge, into the water below !

So singular was the effect produced upon his brain and nervous system, after the occurrence of the accident (the final result of which I have not until recently ascertained), that I have considered the case of sufficient interest to report it in full.

Several months ago the Rev. Mr. M., an intelligent clergyman from the north part of this State, left his home to travel by the Western Railroad to this city. While sitting in the cars, about nine o'clock in the evening, just before the train reached Utica, he felt, as he states, a slight degree of faintness, which he attributed to the confined air of the place, and leaving his seat, he stepped out upon the platform to breathe for a few moments the fresh air. This was the last he recollected, until he found himself struggling in deep water ! It seems that the train at this time was passing over the Mohawk River, near Whitesboro', at which place the stream is spanned by a skeleton bridge, and that losing

his balance, or fainting, at this moment, Mr. M. fell headlong through the timbers of the bridge into the water below! This "Hydropathic" dose, thus suddenly administered, brought him to "himself again," and being a good swimmer, after floundering in the water a moment, he swam to shore, whilst his companions in the cars, unconscious of his fate, passed on, for he was not missed, as in the dark no one had witnessed his sommerset. On looking about he saw, at some distance, a light, which he followed, and found a house, where he obtained some dry clothes, and remained for the night.

On the following day he took the first train of cars that passed, and came on to Troy, where he found his baggage—which had been retained for an owner—and the same night came down the river to this city. When he arrived in New York, he found one of his limbs—which had been considerably bruised against the timber, as he fell through the bridge—swollen and highly inflamed. But besides this, although he had given, on his first arrival, a correct and full history of the accident that occurred to him, to his friends, where he stopped in the city, yet they found, a few hours afterwards, that he was losing the power to express his ideas in a connected manner. Under these circumstances I was requested to see him. I found him laboring under considerable excitement; his leg was inflamed, swollen, and painful. But the peculiar symptom in his case was his utter inability to express correctly a single idea. He knew perfectly well what he desired to say; the idea was clear in his own mind, and he had command of *words*, but *no power to arrange them* so as to convey any sense to the hearer. A pen and paper were given him, and he wrote *words*, but they had no connection, nor could anything be inferred from them; and he himself could discover at once that they were without meaning. He was bled freely, active cathartics were administered, and measures taken to reduce the inflammation in the injured limb. In this we were successful, but his other difficulties seemed to increase, for the next day he was unable to speak at all, and in this condition he remained for several days. He appeared to comprehend fully whatever was said to him, and in fact he manifested throughout the whole no other sign of mental aberration, but this inability to express ideas in words.

In about a week from the occurrence of this loss of speech—or, rather, a loss of the power of conversation,—he began to frame short sentences, so that he could be understood; and these sentences were very much like those made by young children, in their first attempts to connect words together:—as for instance, when I inquired of him, on calling about this time, how his health was? he replied, speaking very slowly, "much feel better thank you to-day," and for several days all his sentences were more or less transposed in this way. In the course of another week, however, he was so far recovered, as to be able to converse in a very connected manner. But it was several months after the occurrence of this singular accident, before the derangement it produced upon his nervous system had passed entirely away.

Dr. S. Conant Foster reported the following case:

Catharine F., a stout, healthy looking Irish girl, on embarking at Liverpool, was accidentally pushed into the water, and very much frightened. Shortly after she was taken out, she was attacked with a hiccough which lasted a fortnight, and was then relieved. She had no return till about six weeks after, when within about a week's sail of New York.

This was about six weeks before she applied at the Dispensary. She stated that she had not a moment's relief in the whole of that time, having been almost entirely deprived of sleep. She had been under the care of two or three physicians, and had been bled and taken a great variety of remedies. One of the physicians of the Dispensary had her bled a second time, and gave her opium and asafœtida in pills, and applied some counter-irritation by means of small camphor moxas along the cervical and dorsal vertebræ (where there was considerable tenderness on pressure). He also administered an emetic, which gave slight temporary relief, and put her upon the use of strychnia. After giving a fair trial to this latter remedy, on the 1st of Sept. I applied the croton oil to the spine and epigastrium, having first tried a dose of hydrocyanic acid without effect, and made pressure upon the epigastrium, which increased the singultus. Sept. 2. Repeated croton oil externally and gave it internally—producing a full eruption and very free purgation, but no relief. Sept. 3. Croton oil was again administered with same result. Sept. 4. Gave sulphate of morphine in doses of one quarter of a grain every half hour. Next day she appeared considerably relieved. Had taken the whole quantity of morphine allowed her, viz. two grains, in the doses directed, which had not produced sleep or any narcotic symptoms. As the hiccough still continued, though in less degree, I again gave her the same quantity of morphine, directing her to commence taking it in the evening. She again took the whole eight doses, the last one being followed by a cessation of the symptoms. No unpleasant effect followed, except a slight headache, which soon passed off.

Dr. Foster also mentioned a case in which cupping the temples had been followed by conjunctivitis. The case was one of amaurosis accompanied by congestion of the retina, and every time the cups were applied the conjunctivitis followed, to such an extent that it became necessary to use astringent washes. At the same time, considerable improvement took place in the sight.

To be Continued.

Art. X.—*On the Influence of Malaria and Malarial Diseases.* By A. G. Lawton, M. D., of Marshall, Saline County, Mississippi. Communicated in a letter to the Editor.

When we survey the past history of this country, from its first discovery up to the present time, we find that this invisible and mysterious agent, called *Malaria*, has been more widely disseminated, more pervading in its influence, and more efficient in the causatives of diseases and death, than all other causes combined.

It was the remark of the celebrated Volney, when travelling in this country, that every valley in America produced malarial fevers; and, although this observation is far from holding true at the present day, yet there has been a time when it would be strictly just, when understood in the broad sense, which it was originally designed to convey. According to Maccullock, one half, at least, of human mortality is owing to this cause. He says:—"At Walcheren, we lost 10,000 men, and the Antwerp fleet to boot. And when the French army attempted Naples

in 1528, out of an army of 28,000 men, 24,000 died in a few days by choosing an injudicious encampment at Baix."

All past history goes to show the deadly influence of this invisible poison; and how it has occasioned the loss of armies—the failure of expeditions—the frustrations of plans and national movements—the depopulation of countries, towns and cities—cities that were once populous and powerful, where now the atmosphere is so pestilential, that it is dangerous even to visit the spot where they stood.

In 1610, the colony of Virginia consisted of nearly 500 persons, but in consequence of want of food and malaria, at the end of six months, only sixty of the whole number remained.

The early settlers of new countries suffer more from malaria than those of older countries. When the Spaniards settled Cuba, and the other W. India islands, great multitudes fell victims to miasmal fevers. Saludal exhalations are often prevalent, and the cause of fevers where they are not suspected. For example, during December and January last, I attended six cases of fever, of a malignant and typhoid character, in one family who lived on a high, dry, and hitherto healthy spot in Saline county, Mississippi. I regarded the fever as one produced by a specific cause; and, after searching in vain in and around the house, I suspected it might be under the house, the floor being of loose boards, between which were wide cracks, as is common in this country. I raised a board, and sure enough there it was. The house, which was of logs, was built on the grass, the floor being about 12 inches from the ground, and this space was filled with old bones, grass, crumbs of bread, dirt and sweepings, that had been accumulating for eight or ten years, forming a mass altogether about one foot deep. And this had been kept constantly wet by wash water, and heated by fire in the room, on which floor a large family slept and ate. And this mass under the floor, in contact with the decaying house-logs, on the ground, formed a perfect hot bed, just fit for the extrication of poisonous effluvia, which are more effectual in cold weather, because the house is more constantly shut and a hot fire in the room.

Often have I seen whole families die off in a few days, and the population of neighborhoods generally thinned, when a timely knowledge of the true cause might have saved them all. In Holmes county, Mississippi, on the banks of a small stream, on one farm, in 1836, forty negroes and a whole white family, except the father, died in three months, leaving but one living soul on the place. And I am acquainted with many instances of a similar kind in Michigan, Illinois, Missouri (in this county), in Louisiana, Texas, and many other places.

According to authors, the circumstances calculated to generate miasmatic exhalations or malaria, are the ploughing of lands for the first time. They are also developed by the action of water on wood in casks at sea, bilge water in holds of ships, marshes, stagnant pools, moist meadow lands, etc. A mixture of salt and fresh water in pools or marshes, the drying up of lands that have been inundated, also give origin to this poisonous agent. Ploughing the western prairies, for the first time, is generally followed by more or less sickness.

The following are the results of my observations made in a small part of Saline county, Mississippi: Of *one hundred and five* families, who have settled here from 1836 to 1843, *fifty-five* ploughed fields on the *south* and *east* of their houses; these had fevers, bilious remitting, or intermitting,

or some other disease. During the first, second, and third years, indeed, scarcely one of them escaped some kind of sickness. *Sixteen* of them ploughed fields on the *west* of the houses; of these, many had intermitting, some few bilious remitting fevers, but of a tractable character, and generally on the second or third years. *Eighteen* ploughed fields on the north, and but a few of these had intermitting fevers, and these during the second or third years. *Sixteen* did not plough around their houses at all, and none had any of these kinds of sicknesses, more than might be expected in any healthy country.

It takes the sod two and three years to rot, and it generates malaria every year, until it is well rotted. Log houses built on the ground, as soon as the logs begin to decay, especially if they have no cellars under them, produce an immense amount of the poison in question. And where they have loose floors, as the poorer class generally do in these countries, two-thirds of everything that falls on the floor is swept through. This accumulates by slow degrees, and is wet three or four times a week, by wash-water on the floor, until it forms a perfect hot-bed, just fit for the generation of poisonous exhalations.

And these houses have no windows, nor means of ventilation but the door, which is constantly kept open for light to come in, except in the coldest weather of winter. Then is the time for this putrefying mass under the floor, and the rotting house-logs, always moist and hot by fire in the room, to generate fevers of the most malignant character and grade. The malignancy and awful fatality of these fevers are well known to practitioners of these countries. I see no reason why these very causes would not produce a genuine typhus.

Maccullock says, that a remittent will become, or perhaps produce, in any given individual, a contagious *typhus* under confinement.

But I think the most, if not all these cases, may be traced to a combination of the two poisons, animal and vegetable exhalation, and these cases generally occur in, or immediately after, very cold weather.

There is a stream running through our county, called the Salt Fork, the head of which is a salt spring, large enough to turn a mill a half-mile below its source, in which I am told a lead has been dropped 300 feet without finding bottom. This stream has many other salt springs running into it in its course. It is a mixture of mineral salt and fresh water, and a beautiful clear and running stream. As far back as I can trace, the people living on the banks of this stream have suffered with fevers every year, and with many other diseases; sometimes the greater part of the population are sick. But for three years past, it has been more than common sickly. In my practice on this stream last season (1835), out of a population of 63 persons, there were 56 cases of fever, mostly bilious remitting. Of these none died. Malarial diseases are often masked; it is difficult to discern their true type and character; the fever being low, and sometimes wanting. According to authors, malaria induces, or produces,—fever, neuralgia, dysentery, cholera, tic-douloureux, or headache, &c., &c.—*M'Cullock.* But I would not stop here, but would include congestion, inflammation of the uterus, assimilating cancer, and cured by *iodine*, hypertrophy of the liver and spleen, chronic diseases of the mesenteric glands, anasarca, &c.; also includes a tendency to venous congestion, imbecility both of body and mind: especially in those who live on improper or scanty food, in old, decaying houses,

without windows or proper means of lighting and ventilating, abortion, flooding, ovarian dropsy, &c., &c.*

I was recently called to see a young man in the family of J. G., on the 9th day of fever. When I arrived at the house there were three more persons down with the same fever, which was of a typhoid grade. On the next day when I arrived at the house, I was much surprised to find three more boys, still younger, down, which made in all seven cases. They all got well except the one I was first called to see, Oct. 22. He died on the thirteenth day; had black sordes on the teeth, bleeding from the nose and gums, and delirium.

On inquiry, I found the facts to be as follows: A year or two ago they had built a brick house, under the wing of which was a cellar, in which water had stood for the last eighteen months, open on the south by a door and window. Some weeks ago these boys had dipped out this water and mixed brick with it in hot weather, and it had a very bad smell. The oldest, who died, was the most exposed; he moulded the brick, and stood on the wind side of the bed where the brick was drying.

It appears that these boys took the fever one after the other, as they were exposed, or according to the intensity of exposure to the exhalation in making and drying these brick. All that assisted in making and drying these brick, took the fever. The others were all well and hearty, and had no sickness that year worth mentioning.

This is one of the many instances of the kind I have witnessed. I will now offer a few remarks on *symptoms*, but they will generally be confined to the sickness on the two streams, the Salt Fork, and a tributary of Blackwater. Both are salt water in part.

These streams often overflow their banks, and spread over grassy bottom land. This generally happens in June or July, after which it is generally sickly.

After exposure to miasmal exhalations, for a longer or shorter time, it may be a week, three weeks, or three months, depending on other existing causes, or the constitution of the patient, the signs of disease appear. The first thing noticed will be, after a hard day's work, getting wet, going without dinner, or eating too much, exposure to hot sun, &c. On the next day, unexpectedly, and without any ostensible cause at the time, the person feels an unaccountable weakness in the back and legs, slight aching in the head, eyes and stomach, accompanied with a little coldness of the fingers; drowsy, dull, and listless; sometimes he expe-

*While on a recent visit to a part of New England, remarkable for health, we became acquainted with an instance which illustrates very strongly the influence of malaria, when of not sufficient intensity to cause regular paroxysms of fever. A family of seven persons, old and young, lived in a house, in the cellar of which was a large quantity of decaying vegetables, partially covered with water, which stood upon the bottom of the cellar to the depth of nearly six inches. The family, though not confined to their beds, were, nevertheless, all so indisposed as to be almost wholly unable to attend to their ordinary duties. The most prominent symptoms, and which existed in every individual of the family, were nausea, want of appetite, furred tongue, bad taste in the mouth in the morning, muscular debility and prostration, universal malaise, headache, pain in the spinal cord, shooting pains in different parts of the body, depression of spirits, languid, sluggish circulation, torpor of the surface, and all the secretions, irregularity of bowels, etc. These symptoms existed for several weeks before the cause was discovered, and without resorting to any other measures than removing the cause, draining the cellar and cleaning it out, they all soon recovered their usual health. Such facts certainly ought to convince those who are still sceptical as to the existence of any such agent as malaria.—*Ed. N. Y. Jour. Med.*

riences a slight trembling: after a few hours it goes off and he thinks no more about it, until it comes again, which will be on the next day, or odd day, at the same hour, which is generally in the fore part of the day; but it may occur at any stated hour. This may continue for a week or more, getting better and worse. After a while he finds himself unable to attend to business, and concludes to doctor; he takes a heavy dose of Cook's pills, or some other drastic purge, after which he gets a hard ague chill, or finds out that he has an attack of fever, of which he may get well in a few days. This is the beginning of the mildest cases. They get well, but being constantly exposed to the original cause, they soon get down again.

At a certain time of day they will have great weakness, blindness, or throbbing in the head, palpitation of the heart, feet and hands swell every afternoon. They will take a pain in or over one eye, or over one side of the head (this they call sun pain); the eye inflaming, is red and painful, with the fever on that side of the head; after three or four hours it goes off, to be renewed on the next day or odd day. But sometimes the pain and fever are more severe, rising with the sun and going off as the sun goes down, and they sleep well as usual at night. And in the same way, occur sick-headache, neuralgia, toothache, and vomiting. I have seen vomiting occur at ten o'clock for a week, every day, often mixed with blood. But sometimes weakness is the only symptom, and this increases for weeks with a tolerable appetite all the time.

As the season advances, the attacks are more violent and sudden, the fever gets stronger as the cold weather approaches, when many of the cases become strong and bilious fever, or they will take a chill that will prostrate them at once, and the fever rises high, or the fever may fail to come at all; if so, the exterior assumes a bloodless appearance. There is more or less congestion, sometimes complete if the congestion is partial; there may be vomiting, sometimes, of blood. In females, vomiting matter, tinged with blood and flooding at the same time, especially about, or at the turn of life. In girls the disease is ushered in, many times, by uterine irregularities or uterine flux. Vomiting blood is a common occurrence in many grades of these fevers. Congestion may take place in the first chill, but more commonly in the second; it is often brought on by overpurging, after which there is no fever, for that is the end of the race; they either die or get well,—that is, when congestion takes place suddenly and extensively.

Congestion may take place in the lungs, spleen, liver, bowels, and sometimes in the head, but not often. In congestion of the lungs, the veins of the extremities assume a dark color, and sometimes black; respiration short and oppressed, and a feeling of great weight across the chest; the pulse gets weaker as congestion becomes more established, until it is finally lost; the skin on the extremities assumes a leaden hue; cold perspiration oftentimes is extreme; cold feet and hands, and the patient complains of nothing but heat. There is congestion of the bowels, liver and spleen, and this is by far the worst complication; the pulse sinks, the extremities grow cold; as the cold advances the skin assumes a bluish cast, or leaden hue, and dimpled like goose-flesh; the tongue may be dry and clean, or a little furred, or it may be coated thick and dark, if the fever has run a number of days before congestion took place; the respiration is short and oppressed; there is great weight and heat across the stomach and bowels;

cold perspiration, and sometimes delirium. In fatal cases the perspiration is excessive, the skin becomes relaxed and cold; the patient is restless and constantly changing from one position to another, often complaining. Ask him what pains him, he will say, nothing, no pain, but so hot, and yet he is of an icy coldness everywhere but on the stomach and bowels, which are very hot. As death approaches he becomes more composed and tranquil, and dislikes going to sleep. Congestion may take place any time in the course of a fever, especially on the ninth day, but always on the day and hour according to the manner and type of the fever.

As to the treatment of malarial fevers all agree that QUININE is an antidote, or a specific, some give it in large doses, some in small, and both are mostly fortunate. I have given it in all ways, and I am fully convinced that one grain of quinine, combined with other substances, will effect more than five will by itself. Three years ago I adopted a plan of combining it in a manner that I never yet have had cause to change. The combination has two advantages. One is, it is more effectual, safer, and leaves the system in a better condition; the other is a great saving of the article. In intermittent and all mild malarial fevers, I give a purge if it is needed, generally a mild one, as blue mass, ten grains of calomel, with Dover's powders, or Lee's pills, according to the circumstances of the case. Then I give the following powders, changing them to meet the indications as near as possible. I never bleed in these cases in the warm season, and very seldom in the winter, for bleeding is very apt *to induce congestion*. The constituent principles of these powders may be increased or lessened according to the circumstances of particular cases.

℞ Quinæ Sulphate, gr. i., or Quinæ Sulphate, gr. ij.
Camphor Pulv., gr. i., " Camphor Pulv., gr.
Pulv. Doveri, gr. ij., " Carbonate Ammonia, gr. ij.
Fiat Pulvis. " Fiat Pulvis.

℞ Quiniæ gr. ij., or Quinæ, gr. i., or Quinæ, gr. ij.
Camphor, gr. ij., " Camphor, gr. i., " Camphor, gr. ij.
Myrrh, gr. ij., " Capsic. gr. ij. " Morphine, gr. 1-8.
G. Opii, gr. 1-4, " Opii gr. 1-4, " Ferri Carbonas, gr. ij.
Mx. Mx. Mx.

In intermittent fever, I begin with these powders soon after the fever begins to go off, and give one every two hours until six or twelve are taken, according to the type of fever. Then if needed, I give one or two pills at night, made of aloes, soap, and rhubarb, and the next day give the powders as before; and I seldom have to leave medicine but once for these cases. In bilious remitting fever, I generally lessen these powders, beginning early in the morning, and give four, five, or six of these powders through the day, with directions to stop when the fever gets high, give a dose of calomel at night, and nothing more till morning, when I commence on the powders again.

In those cases where the fever runs high, I give calomel, or blue mass, every other night, or every night until the biliary secretion is established, when other purgatives are stopped, and I continue the powders, and sometimes the above named pills at night. In the most of these cases there is much visceral irritation, and here blisters and counter-irritants of mustard must be used. Sometimes there is excessive vomiting in these cases, when I find nothing better than what has been

long in use, that is, a mustard plaster over the stomach, and sometimes around the ankles and wrists. With this treatment I have been so far very fortunate, and seldom lose a patient. In winter fevers I increase the Dover powder, and lessen the other parts in these powders, and the effect has been perfectly satisfactory.

Pills containing camphor I keep corked up in vials, and make but few at a time. Thus kept I think the camphor is retained sufficiently for all practical purposes.

ART. XI.—*Case of Idiopathic Tetanus, treated successfully by Strychnine.* By EDWARD VANDERPOOL, M.D., of New York.

New York, 13th October, 1846.—Was requested to see Mr. B., aged 58 years, segar merchant. Just one month ago he thought he took cold from sitting in front of his store evenings, from a chilliness creeping up the sides of his face, which continued for several days. This was followed by a sore feeling of the face, near the ears, and inability to extend the jaws, with a difficulty of swallowing. About this time, he commenced to fall backwards when walking, which he would do every few days, from a sudden spasmodic opisthotonos attack. Two days ago he fell suddenly, in the same way, through the lower half of a window, breaking out both the sash and the glass, but without injury to himself.

I found him with Tetanic expression of countenance, permanent rigidity of the masseter and temporal muscles, jaws nearly closed—could only show the edge of the tongue at its tip, which was much bitten, by being caught between his teeth whilst dozing—is frequently drawn or, if standing, thrown backwards by spasmodic action of the muscles of the back. Bowels soluble. Pulse eighty, and soft. Has taken several cathartic doses of calomel since he felt unwell, and "a number of sweats." Prescribed strychnine in solu., $\frac{1}{16}$ grain every two hours.

14th October.—Doctor Fell happening to call on me, I invited him to see the patient. 10 o'clock A.M.—Took only three doses yesterday and one this morning. Found him with a handkerchief tied around his waist from bad feeling in the region of the diaphragm—produced, as he supposed, by a fall an hour before—rigidity of the jaws about the same; his teeth are worn off, to appearance one eighth of an inch—thus allowing for the distance he can open his mouth. Spasms more frequent; takes fluid nourishment well. Bowels have moved. R Stryc., $\frac{1}{14}$ grain every two hours. 7 o'clock P.M.—Jaws have yielded a little, but spasms have been very frequent. R. Stryc. $\frac{1}{12}$ grain every two hours.

15th Oct., 9 o'clock A.M.—Patient has had a bad night. It required two men to lift him in the bed; he thought his back would break from the rigidity. Could not remain in the recumbent posture, from the greater frequency of the spasms. Missed his medicine only once, from having fallen asleep. Says he feels well, but weak. Spasms are milder this morning. Jaws more relaxed; can introduce his fingers between his teeth, and had just swallowed a raw egg without beating. R. Continue $\frac{1}{12}$ gr. strych., and wine *ad libitum*, and generous diet.

7 o'clock P.M.—Opens his mouth wider. "Can speak, swallow and spit with more ease." Relishes his food, and has taken only a half gill of the wine. R. Continue the prescription.

16th Oct., 9½ o'clock, A.M.—At 11 o'clock last evening patient discontinued his medicine, undressed himself and went to bed, for the first time since under treatment. His sleep was frequently interrupted by the spasms. At 7 o'clock this morning resumed the strychnine, which immediately produced its specific effects. Opens his mouth about the same as last evening, and can protrude his tongue an inch and a quarter. Pulse seventy-six, and soft. As he lies in the bed with his knees gently drawn forward, his spasms cease. Bowels have not moved in three days. R. Ol. Ricini ℥ss. ol. Tiglii gtt. j. M. 8 o'clock P.M.—Patient says he feels twenty per cent. better every way. Jaws more relaxed; articulates easier; uses his mouth more freely; has had only two or three very slight spasms; pulse eighty; oil operated gently. Has taken beefsteak, &c. Continue the prescription.

17th Oct., 9½ o'clock, A.M.—Patient improving. Says he went to bed alone, and much easier, and rested better than the night before. Had very few spasms; omitted his medicine from 12 to 6 o'clock. Feels much better and stronger; sits erect; has walked around the room and into another; opens his mouth wider; protrudes his tongue to the full extent; complains of nothing but the uncomfortable feeling about his jaws. R. Continue the strych. 7 o'clock, P.M.—Has slept two and a half hours; had a few slight spasms, otherwise same as in the morning. R. $\frac{1}{10}$ gr. every two hours.

18th Oct., 11 o'clock A.M.—No particular improvement. A few spasms through the night. Had a bad fall when walking this morning, which cut his scalp badly.

Monday, 19th Oct., 10 o'clock, A.M.—Says he has had a passable night—best yet—very few spasms; general improvement. Has taken beefsteak and coffee. Seems almost well.

20th Oct.—Patient convalescent.

21st Oct., 11 o'clock, A.M.—Continues to do well, and has gained considerably since yesterday.

22d Oct.—Patient discharged cured.

The above, as far as I can ascertain, was a case of Idiopathic Tetanus, which—together with the other two of a Traumatic character, Miss McC. and Mrs. A., published in your last number, with those of Dr. Fell, and cured with strychnine—encourage me to believe that this most awful malady may be controlled, and made subject to the remedial powers of this wonderful medicine.

Within the last two years, two other cases have occurred in my practice. The lamented young S. Fox, aged 19 years, from an injury whilst bathing, died the fifth day; having been treated with Tart. Ant., Asafœt., Laudanum and Brandy. The other, a colored woman, two months subsequent to young Fox, recovered. Both were Traumatic Tetanus. The woman had the Opisthotonos form, permanent rigidity, with occasional spasmodic aggravations—especially of the diaphragm—which caused excruciating suffering. The fifth day, her jaws having become firmly closed, I concluded to take the responsibility and bleed her to the extent of a large wash-bason full, when her jaws yielded a little—say ⅜ths of an inch—and this state of things I endeavored to maintain by Tart. Ant. She took four grs. in solution every hour and

every other hour for two days without producing emesis, when, for fear of inflammation of the stomach, I suspended its use. Her convalescence was very slow, but her health has been good since.

N. Y., Oct. 20th, 1846.

P. S. Strychnine will not dissolve in water or alcohol. A good way is to add 3j Acetic acid to 3vij. aq., which will make a clear solution.

ART. XII.—*Remarks on Inorganic Matters in Vegetable Products.* By ISACHAR COZZENS, Esq. (Read before the American Association of Geologists and Naturalists, Sept. 2, 1846.)

TO THE ASSOCIATION OF AMERICAN GEOLOGISTS AND NATURALISTS.

GENTLEMEN,—Having always been an attentive observer of things, it was not out of my way to discern that there was a considerable quantity of real earthy matter, and that of extreme fineness, in what is called rock or leaf-mould, which lies in our forests, and which is a product from decaying vegetable substances. That this earthy matter was originally in the leaves and wood which produces this mould, there is no doubt; it is in such extreme division as to be thought, not the result of a mechanical operation, but on the contrary, it was more probably carried up in the sap, which nourished the plants, and this is now the product which was once the component part of the plants. For it is to be supposed, that if all the compounds of the vegetable kingdom, viz.: carbon, oxygen, hydrogen and nitrogen, were dissipated by the long process of decay or rotting, they would leave the earthy matter only, which is not destructible, and which is not discernible, until decay takes place; and when we know that by the destructive process of incineration, we obtain the earth contained in the plant, we can suppose that the same result would follow by the long process of decay; from hence we may reason that the very large quantities of fine earthy matter, which is on the top of the diluvium (or drift, as it is called by some), and is now found in the mould, has passed up with the sap of the plants, by vegetable action, in a state of solution in their juices, and again precipitated and deposited as the plants decayed. In my opinion, all the finer particles of earth have not become so (as is generally supposed) by mechanical means, such as trituration, and the grinding of one particle against another; for it is well known to chemists, that a much finer powder can be made by solution and precipitation (and with greater facility) than by the mechanical way of grinding. This fine earthy matter (which may be called Tara-albuma, or the earth of the sap of plants) is found in its pure state all over our forest grounds (where the wood has not been cut off, or the land tilled), in a much larger proportion, as it seems, than in old tilled fields, where the diluvium has been turned up with the plough, and consequently mixed with it.

It is said, that half-decayed wood, peat, bituminous coal, and anthracite, give little or no potash; why should they? They have undergone a decomposition, they have lost the natural acids, which held the alkali in a neutral state in the living plant. Yet all these semi-mineral-

ized products give, when burned, a large product of fine ashes; which, there is no doubt, was at one time carried up in the sap, which nourished the plants which produced them. It must be admitted, that potash is essential to plants in neutralizing the acids, and also for the purpose of dissolving the siliceous earth which goes into the compound of the sap, while their natural acids neutralize the alkaline earths.

It may be asked, what has become of the alkali which was in the plants that formed the coal, &c.? It must have been set free, and formed other compounds, having found something that had an affinity for it, as silex, when in wet situations, and as nitric acid, in dry ones. Saltpetre earth, which contains a certain quantity of potash, is common in many of our dry caverns west of the Alleghany mountains.

In mineral coal we find some of the sulphurets, and carbureted and sulphureted hydrogen gas; products by decomposition of vegetable matter. I do not say that all the earthy matter, left after the burning of coal and peat, is from the same source, for it is well understood that the rains and freshets wash down from the hills, continually, large quantities of their materials, coarse and fine, according to the water that falls, or to the exposure of the place to storms; but along with these freshets, also goes this fine earth, which has undergone a vegetable change to bring it to its fineness; and should it be carried on top of a peat-bog, it then mixes with the peat, and would become part of the ashes (or product) if the peat was burned. I was led to these conclusions while at Mr. Cooper's farm, near Bull's-ferry, N. J., in examining a peat-swamp, which is in a basin of greenstone or trap, on top of the palisadoes. This basin contains about 70 or 80 acres, and had the outlet so high in its natural state, and that over a ridge of rock, that the water stood a foot or more on it for six or seven months of the year, until Mr. C. deepened the outlet by blowing out the rock about four feet. This swamp was covered with a pretty thick growth of maple, gum, and an innumerable quantity of alders, and whortleberry brushes, with catbriars, brakes, ferns, poison sumach, &c.; all of which grew in the peat. Before it was drained, a pole could be thrust down by the hand in one place nine feet. After draining the swamp the surface of the peat was much lowered, the peat becoming more compact. Nearly all the border of the swamp was covered with the original woods; and the hills and grounds around it had never been ploughed. The water which ran from it through the outlet was of a coffee color, more or less of a dark brown; this showed that a large quantity of vegetable matter was carried away in solution from this basin by the water which fell annually in rain; may not the potash of the plants have been carried away in this water? The filling up of this basin with the dead vegetable matter which had fallen in, or was washed in (until it had at last reached the top), could only have commenced after the palisadoes were thrown up, and after the diluvium or drift was swept over it, and vegetation had commenced on the upper or last change of surface; for we find in its bottom all the members belonging to the diluvium, viz., boulders, coarse and fine, and small gravel and sand; on the top of which lies the vegetable ashes by decay. In digging in this swamp, you had first to clear away the peat, moss and roots; you then came to good peat, then to a stiff blue mud, composed of very fine siliceous earth and vegetable matter, which, when dried, turned to a light blue color, and crumbled to a fine powder when exposed to the frost and air; under this was a very fine siliceous earth,

with very little or no vegetable matter, and of a quite light grey color, showing, as the vegetable matter had been washed out, the siliceous earth had taken its natural color; under all was the diluvium or drift, which once swept over the regions we now inhabit.

These observations were made before Mr. Ehrenburgh had published his papers on Infusoria, and made known to the world the discovery of the organic relics of infusoria to be silex.

As I had undertaken an analysis of the soils on the farm, I was examining them with the microscope, and perceived particles which I believed to be organized matter, and which I then attributed to the little globules, veins and cells, that are formed in the general structure of plants, but which I have since supposed to be crystalline particles, as there is no doubt a crystallizing process going on in all earthy matter, which is in such fine division, as that of ashes from incineration or decay.

I do not think that the great quantities of this earth, with its position and the cause of its fineness, have been noticed by geologists as the subject demands. What I wish to establish by this paper is, that there is a very large proportion of the finest earth of our soil that has been produced by the plants themselves, by their carrying up the earth, in their sap, in the process of vegetation, while alive, and depositing it while undergoing decay and after life.

The great quantity of inorganic matter of vegetables, having so long escaped notice, is clear; for it is so mixed with organic matter that it cannot be seen when it is in leaf-mould or peat; and when it is in ploughed fields, it is so mixed up with the rest of the ingredients of the soil; besides, the only difference between this and common sandy earth is its fineness. That there is a vast deal of this earth produced in the forest, must be admitted; for by the burning of one cord of dry wood (the weight of which is about on an average 5088 lbs.) 127½ lbs. of ashes are produced.*

It is impossible to tell the quantity of wood, leaves, limbs and other vegetable matter which is constantly falling to the ground, and is exposed to decay in our forests; all these, giving up their ashes or inorganic matter, which was first taken from the rocks or their products. If we even allow that some of the earth is again taken up, in the food of the succeeding vegetation, it is not to be supposed that all of it is, but rather, that the plants would seek other and new supplies from other rocky matter which lies in their way. By a calculation which I have made from the ingredients of the palisades rock, it would take something over 1000 lbs. of rock to produce 1lb. of potash, so that the plants must be very industrious to obtain potash enough for their composition. The largest quantity of potash which rocks are said to contain is found in the Feldspar, some of which has over 8 per cent.; many rocks do not contain any, or a very trifling quantity, such as hornblende, which has only .5, while Augite has none at all. It is very probable that the new growth of plants would seek some other than the one used, or old ingredients,

* By a careful examination of 20 different plants, or vegetable products, when submitted to incineration, it was shown that the average quantity of ashes, or inorganic matter, was, in 100 parts, 2½ only of the whole. Some plants, and parts of plants, yielding more than others; for instance, hay, wheat straw, and leaves of trees, yield from 6 to 10 per cent.; the grain of wheat 10.30 per cent., while from 100 parts of the wood of the oak, pine, elm, and beach, but 1.9 per cent. down to 0.20.—See Chapin's "Hand Book of Plants" and Chaptal's Chemistry.

as they have a natural aptitude in seeking out their food, a disposition something like instinct in animals, only in a much lower degree, by which they are directed to seek for that kind of mineral matter which would best suit their economy of growth. I saw a singular instance of this, as long ago as 1808, at which time I visited a place called Queensbury Furnace, which is situated in the mountains of the Highlands of the Hudson, back of old Fort Montgomery; after landing at the old fort, we passed along the road which leads through the valley of Fort Montgomery Creek, about three miles to the place above named; on arriving, there is to be seen on the right, a huge stone building (which was the smelting furnace) standing partly in the bank in a sidehill; between this furnace and the road is a plain or plat of ground, of about 100 feet square, where had once stood a wooden building (then gone). The tap-hole of the furnace was at this side; this huge stone smelting furnace was, at its base, from 40 to 50 feet square; it was 20 to 25 feet high, and at the top about 30 feet square, making the outside have a somewhat pyramidal form, with a flat top, the stones of the wall being laid battering (as masons call it) from their base upwards. This furnace had, in the centre of its top, a hole of about five feet or a little more, for the purpose of charging it, when in blast, with the ore and charcoal consumed in the process of smelting; this opening answered also for a chimney. There was a road, some thirty or forty yards long, in the rear of the furnace, running down along the sidehill until it met the main road, for the purpose of drawing up to a level with its top, the materials for feeding the furnace. On the top, and around about the opening, lay a considerable quantity of charcoal (in powder) which had lain there ever since the furnace was in blast; this was mixed with sand and other earth, and covered with dead sod. On the front side of the top, which was the highest from the ground (and below which stood the shed under which the metal was drawn from the furnace to cast the pigs) stood a white-wood tree (the Lirioderdon tulipifera) which measured from the top of the furnace to the top of its leaves, about 16 or 20 feet. The roots of this tree had run through the crevices of the stone of which the furnace was built; one of these (the largest) had reached the ground, running through and down the outside of the wall, showing an aptitude to seek a place for more moisture and food than it could find at the top. This tree was, no doubt, a seedling, and had come up from some seed which had been blown from the forest around, and which had lodged in one of the cracks of the furnace. Should this tree grow to a large size, and afterwards fall by the wind, or become top-heavy, the roots will probably rend the stone-wall of the furnace, and throw the stones up and around about it.

On the subject of "the removal of boulders," and their being kept above the surface, I have made some observations which I should be pleased to communicate.

The roots of trees, in stony grounds, seek their way between the stones, and in many instances, wind themselves about large boulders, so that if the tree is blown down by the wind, or falls by being top-heavy (which is sometimes the case), and if there should be at such time any boulder entangled in the root, which is higher than the top of the tree, it is sure to be thrown up from the surface. While I was at Mr. Cooper's farm, I saw there more than twenty instances of this fact, the boulders varying in weight from 100 to 1000 lbs.; they had been

brought above the surface of the ground from three to six feet. By this process, there is now one of these disturbed stones (a Greenstone boulder) on the south side of his farm-line, in Mr. Veeland's woods, which measures about 15 cubic feet; so taking the specific gravity at 3.32, the weight will be about 3112 lbs. This is still entangled in the roots of the large oak which threw it up, nearly six feet above the surface.* This may account for, and is probably the cause, in some measure, of so many boulders being found on the surface, in what is called rocky ground; but this is one or a partial cause, and only holds good in some districts.

Trees have another effect on rocks; they send their roots between the smallest cracks, and by this means, act as a wedge while growing, which opens the cracks so as to let in the water that comes down as rain or snow, and which freezes in cold climates, and splits the rock further, so that pieces fall down when this takes place on the side of a cliff of hills or mountains. This holds good from the largest down to the smallest of all plants; for about twenty-five years after the City Hall, in New York, was built, the moss had collected on the white Limestone rock or Stockbridge marble, of which it is built, and had penetrated its roots more than an eighth of an inch deep from the surface; so that it was requisite to use diluted sulphuric acid to wash the building in a number of places, where the white marble had become of a grey color. The roots of the moss could be plainly seen with a microscope, or even with the naked eye.

Trees, also, break up the top of rocks that are seamy; as is shown on a Limestone bed of rock which I saw in Put-in-bay Island, when I was there in 1831. The top of this Limestone rock was so pried apart, and made so small, by this means, that the lime-burners had nothing to do but pick up the fragments of Limestone from among the roots and carry them to the kilns.

By the above facts, and the inferences drawn, I think I have accounted for the large quantities of earthy matter in such extreme division that is found in all parts of the surface of the globe, and intermixed with the surface, and also for the position of many boulders on the surface.

The following experiments were made to ascertain the quantity of inorganic matter in the following vegetable products, to prove the theory of the principles laid down in this paper:—

No. 1. *Experiment* 1*st*.—Old rotten oak-wood—so far decayed that, when dried, it might all be rubbed as fine as snuff, between the fingers—from Col. J. V——'s woodland, near Bull's Ferry, N. J. 875 grains of this, after drying, were submitted to incineration, the product of which was 37 grs. or about 23.646 per cent. of ashes. Microscopic examination—nothing organic.

No. 2. *Ex.* 2*d*.—Rock-mould, taken from the side and top of a rock in Col. J. V——'s woods; this was a pure virgin mould, from decayed leaves and other vegetable substances that had fallen on the rock, from the longest time imaginable. 400 grains of this dried mould was submitted to incineration, and produced 177 grains of ashes, or 44.4 per cent. Microscopic examination—Inorganic, and mostly crystalline traces of woody fibre.

* Since writing the above, I have visited the place, and find the smaller roots are mostly rotted away; but still the boulder lies imbedded on the top of the stump, elevated about four or five feet.

No. 3. *Ex. 3d.*—680 grains of wood mould, virgin mould, or super soil of woodland, taken from J. C——'s land, submitted as before; product of inorganic matter 317 grains, or 46 per cent. of ashes. Microscopic examination—same as No. 2.

No. 4. *Ex. 4th.*—Second layer of Cooper's swamp. 300 grains of dried peat, treated as before, gave 31 grs. of ashes. Microscopic examination—organic, vegetable debris.

In all the four above experiments, Ammonia was thrown off, and could be plainly smelled after the smoke was gone, towards the end of the process.

No. 5. *Ex. 5th.*—The third layer of W. C——'s swamp—sub-peat, or peat-clay—400 grains was submitted to a red-heat, to burn out the vegetable matter; the organic matter obtained was 309 grains. Microscopic examination—inorganic.

No. 6. *Ex. 6th.*—Fourth layer of W. C——'s swamp—a very fine earthy matter, with but a small proportion of vegetable matter—this was washed with water, and a few fibres of roots strained off through a piece of bolting-cloth.—Inorganic.

No. 7. *Ex. 7th.*—Fifth layer. The product of this was the same as Ex. 6th, only it contained some of the sand and gravel of the diluvium or drift which lies below.

No. 8. *Ex. 8th.*—The diluvium or drift, washed, contained sand, gravel, &c.

No. 9 —Ashes from peat, burnt at swamp. Microscopic examination—mostly inorganic; some infusoria.

ART. XIII.—*Insanity, in its Coincidence with Age.* By PLINY EARLE, M. D., Physician to the Bloomingdale Asylum for the Insane.

AT what period in human life is there the greatest liability to insanity? This proposition is not devoid of interest, both to the medical and the general searcher after truth; and inquiries directed towards its solution may eventually result in some practical benefit. Neither extensive professional knowledge, nor uncommon acuteness of observation, is necessary to the development of the general facts that in early life, and particularly before puberty, mental disorders are comparatively rare; that during the active period of manhood, when the intellectual and moral faculties are in their utmost vigor, when the appetites and the passions are the most defiant of control, and all the greatest obstacles in a world of strife are to be contended with, these disorders are most frequent; and that in old age, when the many struggles of life are past, when the goal of early ambition is won, or the hopes of its attainment relinquished, when appetite has become obtuse, passion more gentle, and opinions fixed, they again become comparatively few.

To this general assertion many of the writers upon mental alienation, as for example, Millingen,* Conolly,† Andrew Combe,‡ Dubuisson,§

* Aphorisms on the Treatment and Management of the Insane, p. 66. London. 1840.

† An Inquiry concerning the Indications of Insanity, &c., p. 281. London. 1830.

‡ Observations on Mental Derangement, &c., p. 141. Edinburgh. 1831.

§ Des Vésanies, ou Maladies Mentales, p. 26. Paris. 1816.

Falret,* Voisin,† and Fodéré,‡ confine themselves. M. Voisin demonstrates the truth of the assertion by the tables of Haslam, Pinel, Esquirol, and Fodéré, which he quotes. Fodéré also copies the tables of Pinel and Esquirol, together with the statistics of York Retreat, as published in the Bibliotheca Britannica, Lib. lix., p. 240.

Some other authors, however, more particularly specify the boundaries of that period of life during which the maximum number of persons are attacked with insanity; yet those boundaries are made so remote, each from the other, the included domain of life is so broad, that the knowledge imparted by them is scarcely less indefinite than that of the writers first mentioned.

Thus, Dr. Rush says, "There is a greater predisposition to madness between twenty and fifty, than in any of the previous or subsequent years of human life."§ This proposition is based upon the statistics of Bethlehem Hospital, London, the Bicêtre, Paris, from 1784 to 1793, inclusive, and those of Pennsylvania Hospital, in 1812.

"Insanity," says Dr. Wm. B. Neville, "is hardly known in infancy, and very rarely occurs after sixty years of age; between twenty and forty it is undoubtedly more frequent than at any other time."‖

According to Dr. John Syer, "the majority of cases of insanity is observable within the periods of twenty-eight and forty-five years of age."¶

Dr. Joseph Guislain says, "It is from 20 to 35 years of age that the intellectual faculties of man are in the greatest vigor, and it is also at that period, particularly, that insanity is developed."**

To these authorities, may be added that of Sir Alexander Morison, who says that insanity "is most prevalent between the ages of 25 and 40."††

Finally, there are writers who have endeavored still farther to circumscribe the limits of the period most prolific of mental alienation. Among these is Esquirol, who was one of the first to employ statistics in his investigations of the subject. In 1816 he wrote as follows: "The age which furnishes the greatest number of insane is, with men, from 30 to 40 years, while with women, it is from 50 to 60."‡‡

These are inferences derived from 2638 cases treated at Bicêtre, Salpêtrière, and Esquirol's private establishment.

In 1835, the same author, in giving the statistics of 1557 cases which were under his care at Charenton, says, "The maximum of admissions is from 30 to 35 years. The admissions of men were most numerous from 25 to 30 years, and of women, from 35 to 40."§§

Spurzheim, in the first edition of his treatise upon Insanity, says, "It attacks more persons between 20 and 30 years in France than in Eng-

* Considérations Générales sur l'Aliénation Mentale, p. 42. Paris. 1843.
† Des Causes Morales et Physiques de l'Aliénation Mentale, p. 87. Paris. 1826.
‡ Traité du Délire; appliqué à la Medicine, à la Morale, et à la Législation, p. 70. Paris. 1817.
§ Medical Inquiries and Observations upon the Diseases of the Mind, p. 55. Philadelphia, 1812.
‖ On Insanity, its Nature, Causes and Cure, p. 38. London. 1837.
¶ A Dissertation on the Features and Treatment of Insanity, p. 134. London. 1827.
** Traité sur l'Aliénation Mentale, et sur les Hospices des Aliénés, vol. i., p. 165. Amsterdam, 1826.
†† Outlines of Lectures on Mental Diseases, p. 66. London. 1826.
‡‡ Des Maladies Mentales, &c., vol. i., p. 34. Paris. 1838.
§§ Des Maladies Mentales, vol ii., p. 673.

land."* But in the English translation of this work, a translation probably made from a later edition, the author is represented to hold the following language: "It has been observed that insanity, idiotism from birth excepted, is the most frequent, in England, between 30 and 40 years of age; in France, between 20 and 30."†

"We must observe," says Dr. J. C. Prichard, "that cases occurring before the twentieth year are the most numerous in males, and that the greatest number of attacks manifest themselves, in men, from 20 to 25, and from 25 to 30. In females, the greatest frequency begins between 25 and 30, and it is not diminished until after 45."‡

Dr. George M. Burrows, after quoting the statistics of 2507 cases admitted into the French hospitals, says, "Thus we find, as might be anticipated, that insanity exceeds, in both sexes, in the most active period of life, between 30 and 39."§

Mr. W. A. F. Brown, in his lectures at Montrose, says, "Extensive observation shows that the greatest number of cases of lunacy occur between 30 and 40."‖ His opinion appears to have been partially, if not entirely, based upon Holst's tables of insanity in Norway and the data from the French hospitals quoted by Dr. Burrows.

"Among the predisposing causes of mental alienation," according to M. Georget, "the following are the most important: 1st, The age from 30 to 40 years; then, that from 20 to 30, from 40 to 50.¶

Dr. J. E. Belhomme, in that portion of his work entitled *Récherches Statistiques*, says, "The age from 30 to 39 years is the epoch of life which furnishes the greatest number of insane; yet, for women, the age from forty to fifty years is also prolific of mental disorders."**

M. Quetelet, the Statistician, says "the age between forty and fifty, or rather the fortieth year, is the period of life most subject to insanity."††

Drs. H. Aubanel and A. M. Thore, from an analysis of the data furnished by several authors, as well as those derived from their personal observation at Bicêtre, arrive at the following conclusion: "It appears to us that we are permitted to establish as a fact, that mental alienation, rare in early life, becomes very common after the twentieth year, and is more common between 30 and 40 years, the epoch in which it is at its maximum."‡‡

M. Parchappe quotes the statistics of the institutions of St. Yon, Bicêtre, Salpêtrière, Charenton, and Turin, making an aggregate of 14,267 cases, in which he finds that "the maximum of admissions of the insane, of both sexes, is from 30 to 39 years."§§

He afterwards (p. 56) makes the assertion that "the age which predisposes the most to insanity is from 30 to 40 years."

In 1845, Drs. Debouteville and Parchappe published the detailed sta-

* Observations sur la Folie, &c., p. 112. Paris. 1818.

† Observations on the deranged manifestations of the Mind, or Insanity, p. 100. Boston, 1836.

‡ A Treatise on Insanity and other Disorders affecting the Mind, p. 106. Philadelphia. 1837.

§ Commentaries on the Causes, Forms, Symptoms, &c., of Insanity, p. 245. London. 1828.

‖ What Asylums Were, Are, and Ought to Be, p. 66. Edinburgh. 1837.

¶ De la Folie, ou de l'Aliénation Mentale, p. 3. Paris. 1823.

** Considérations sur l'Appreciation de la Folie, &c. Paris. 1834.

†† Sur l'Homme et le Development de ses Facultés, vol. ii., p. 136. Paris. 1836.

‡‡ Récherches Statistiques sur l'Aliénation Mentale, p. 35. Paris. 1841.

§§ Récherches Statistiques sur les Causes de l'Aliénation Mentale, p. 37. Rouen. 1839.

tistics of 1652 cases received into the Asylum at Rouen. They state that the maximum of admissions falls between thirty and forty years."*

Thus, it will be perceived that, while there is no inconsiderable discrepancy of opinion among recognized authorities, a large proportion of those who are most specific in their assertions, those who restrict the period of greatest prevalence to ten years, concur in fixing that period to the age from 30 to 40.

The works of most of the writers quoted were published before very extensive observations in regard to the subject had been made, and, consequently, their convictions were based upon limited data. A few were written after the accumulation of a comparatively large amount of statistics. Hitherto no other author has published so extensive a collection of cases as M. Parchappe, already mentioned.

As is demonstrated by the subjoined table, I have succeeded in collecting more than twice that number, all from European sources.

AGES OF PATIENTS IN EUROPEAN INSTITUTIONS FOR THE INSANE.

ASYLUMS.	TIME.	Under 20 years.	20 to 30 yrs.	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	Known	TOTAL.	AUTHORITY.
ENGLISH.													
Hanwell.	1840 to 1844	42	165	207	154	64	40	9	1			682	Dr. Conolly.
Bethlehem.	1784 to 1793	113	488	527	362	143	81					1664	Haslam.
a	1836 to 1840	35	165	155	113	72	22	1				562	Sir A. Morison.
a	1844	14	74	78	67	37	15					286	Dr. J. Webster.
Surrey.	3 yrs. end. 1844	94	119	166	148	101	55	22	3			638	Sir A. Morison.
Retreat, York.	1796 to 1840	95	130	165	86	61	47	13	2			469	Dr. Thurnam.
York, L. A.	1814 to 1840	83	297	386	325	204	96	22				1375	Dr. Thurnam.
	Total.	306	1428	1624	1255	682	306	67	6			5676	
SCOTCH.													
Edinburgh.	1844	8	41	47	27	16	12	1				162	Dr. Mackinnon.
Aberdeen.	15 yr. end. 1845	43	198	193	161	110	40	13			12	770	Drs. Macrobin and Ogilvie.
Dundee.	2 yr. end. 1845	4	28	32	22	10	12	1				107	Drs. Nimmo and Mackintosh.
	Total.	55	265	282	220	136	64	15			12	1039	
FRENCH.													
Bicêtre and Salpetrière.	1816 to 1833	867	2404	3102	2706	1866	1356	774	20	2	112	13239	Desportes.
Bicêtre.	1784 to 1793	65	329	380	296	130	53					1193	Pinel.
a	1839	36	105	173	116	45	28	14	6			523	Aubanel and Thore.
Charenton.	1826 to 1833	194	381	415	343	187	92	12	3			1527	Esquirol.
St. Yon, Rouen.	1825 to 1843	61	297	493	441	245	*115					1632	Debounteville and Parchappe.
Caen.		7	38	44	32	18	6	1				146	Vastel.
Nantes.		2	6	13	9	1	3	2				36	Bouchet.
Marseille.		204	488	502	348						1254	1796	Archambaut.
	Total.	1366	4048	5122	4231	2522	1653	803	29	2	366	20142	
ITALIAN.													
Palermo.		19	84	90	62	33	18					306	Greco.
Turin.		31	176	213	119	69	27	1				636	Bonacossa.
a		3	31	96	17	11	3					91	Bertolini.
	Total.	53	291	399	198	113	48	1				1033	
OTHER EUROPEAN.													
Prague.	1835 to 1840	81	230	193	144	73	25	5				751	Wilde.
Norway.		188	198	214	150	125	117					995	Holst.
	Total.	269	428	407	294	201	142	5				1746	
Aggregate.		2049	6460	7744	6298	3654	2215	891	36	2	378	29636	

* These cases were "over 60;" probably some of them were over 70, perhaps 80.
† The ages of these 254 cases are not stated. They were probably from 60 upwards.

* Notice Statistique sur l'Asile des Aliénés, de la Seine Inferieure, p. 21. Rouen. 1845.

Hence it appears, that of 29,636 cases admitted in European institutions, 7744, or a fraction over 26 per cent. of the whole, were between 30 and 40 years of age, the decade which presents the maximum number. The number between 20 and 30 years is to the number between 30 and 40, as 1 is to 1.20, the latter exceeding the former by about 20 per cent.

The respective periods comprehended in the table, arranged according to the aggregate numbers in each, are as follows:

1st.	From	30	to	40	Years.
2d.	"	20	"	30	"
3d.	"	40	"	50	"
4th.	"	50	"	60	"
5th.	"	60	"	70	"
6th.	under	20			"
7th.	From	70	"	80	"
8th.	"	80	"	90	"
9th.	"	90	"	100	"

This table therefore confirms the opinions of Parchappe, Brown, Aubanel, and most of the later writers above quoted. But though this be the necessary result from the aggregate numbers, yet it is not so of all the sections into which the table is divided. Thus, of admissions into the Asylums of Scotland, the maximum number is between 20 and 30 years, instead of between 30 and 40. The same is true of the Asylum at Prague, of the Retreat near York, of the Bethlem Hospital from 1836 to 1840, and of the Asylum at Turin, as reported by Bertolini.

In the total of the English institutions, the proportion between the decennia of 30 to 40 and 20 to 30, is as 1.13 is to 1, the former being 13 per cent. greater than the latter. This excess is, therefore, 7 per cent less than that of the aggregate of the whole table. In the Italian Asylums, the predominance of the decennium of 30 to 40 over that of 20 to 30 is a fraction less than 13 per cent. The difference between the two decennia is greatest in the French Asylums, where the period from 30 to 40 years exceeds that from 20 to 30, by 26 per cent.

There are some sources of error in the table, perhaps the greatest of which is the fact that it includes many cases which were reported not only at the time of first entering the several institutions, but at *every successive admission*, where they have been received more than once. There are some exceptions to this, as in the cases of the York Retreat, and of Bicêtre, as reported by Aubanel and Thore; but it is probably applicable to most of the others.

At all events, the ages of the patients here represented, were taken at the *time of admission* into the Asylums; whereas, the question to be solved relates not to that period, but to the *time of first attack*. Now, reasoning from facts as existing in the United States, as well as from the known disposition of the friends of the insane to delay the period of their removal to curative institutions, it is fair to infer that a very large number of the cases reported in this table were of long standing, and that if, for all such cases, the proper deductions were made, so as to represent the age at the first invasion of mental disorder, the results would be very materially modified. Were the difference between the age at first attack and that at admission into the institutions as great as it has hitherto been in this country, the mentioned alteration would

cause the numbers in the decennium from 20 to 30 to predominate over those of any other.

This opinion is strengthened by the change effected in the statistics of the York Retreat, by the substituting the age at first attack for that on admission.

This is made evident by the following table of the cases at that institution—the same cases included in the foregoing table.

	Under 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Total.
Age on admission	25	130	105	86	61	47	13	2	469
Age at 1st attack	65	156	95	72	50	26	4	1	469

Here, at the time of admission, the excess of the number between 20 and 30 over that between 30 and 40, is equal to 23.8 per cent., but at the time of first attack that excess rises to 64.21 per cent. This shows a difference of 40.41 per cent., effected by substituting the time of first attack for that of admission. But a difference of only about 20 per cent, is all that is required to make the period of 20 to 30 years, in all the cases from European Asylums quoted in the foregoing table, predominate over the period from 30 to 40.

Does it appear probable,—I had almost said *possible*—that, at the York Retreat, the number between 20 and 30 years should be almost 65 per cent. greater than that from 30 to 40, and yet that in the mass of European patients, the number between 30 and 40 should be the greater?—The supposition appears to be absurd.

It is now proposed to attempt an answer to the initiatory proposition, in its application to the citizens of the United States of America. Eight years since, after having investigated the subject so far as the limited data at that time would permit, I arrived at the conclusion that, in this country, the largest number of first attacks of mental disorder is in persons between the ages of 20 and 30 years.* The intervening period has at least quadrupled the number of cases which can be adduced in the investigation of the subject in question.

The Reports annually emanating from the Medical officers of the institutions for the insane, exhibit no less than four different methods of recording the ages of patients:—

1st. The present ages of the patients in the Asylum, on a particular day.

2d. The present ages of all old residents, together with the age on admission of the patients admitted during the year.

3d. The age at the time of admission.

4th. The age at the time of first attack.

Let us ascertain the results of each of these methods.

1st. On the 1st of July, 1841, the ages of the patients in the institution at South Boston, were as follows:—

Under 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Total.
3	18	32	19	16	5	2	95

Thus, the number between 30 and 40 years is not only much larger than any other, but exceeds that between 20 and 30 years, by 77 per cent. Even in the period from 40 to 50, there are more than in that from 20 to 30. That such, or similar, must be the result of the census of any

* American Journal of the Medical Sciences, for August, 1838.

Asylum, is obvious from the fact that, in each of those institutions, there are many patients who have been residents for many years, or, if the Asylums have recently gone into operation, the origin of whose disorder was of a date long anterior to that of their admission. The absurdity of assuming such records, as the premises from which to resolve the proposition in view, is too apparent to require further comment. Yet it is far from improbable, that among the statistics of the European institutions, the inapplicability of some of the items to the production of a true deduction, may be as great as that of those just quoted.

2d. All the records at hand which are properly arranged under the second head, are as follows:

AGES OF ALL THE PATIENTS DURING A GIVEN YEAR, INCLUDING THE OLD RESIDENTS AND THOSE ADMITTED.

Asylums.	Time.	Under 20 years.	From 20 to 30 years.	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Total.	Authority.
Western Virginia,	In 1845	7	58	69	62	24	13	3	236	Dr. Stribling.
Eastern Virginia,	In 1844		23	47	46	25	6	2	149	Dr. Galt.
Kentucky State,	In 1845	24	86	76	54	35	7	3	285	Dr. Allen.
Maryland Hospital,	In 1845	9	47	53	33	24	9	3	178	Dr. Fisher.
Total.		40	214	245	195	108	35	11	848	

The contents of this table, so far as the age of the old residents is concerned, are open to the objections urged against the cases in the Asylum at South Boston. But the patients admitted during the year, being, on an average, younger than the former residents, the results are considerably modified.

The number between 30 and 40 years still predominates over all others. It still exceeds that from 20 to 30, but in the vastly diminished proportion of but 14 per cent.

The decennium 20 to 30, now ranks second instead of third.

3d Inasmuch as a proportion, not inconsiderable, of the patients are taken to the institutions within the first year of their alienation, it is evident that the age at the time of admission is an approximation to that at the time of first attack. The subjoined table includes all the cases hitherto reported, at the American Asylums, in such manner as to be arranged in the class now under investigation.

AGE AT THE TIME OF ADMISSION.

Asylum.	Time.	Under 20 years.	From 20 to 30 years.	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Unknown.	Total.	Authority.
Mass. state,	13 yrs to 1845	151	624	598	448	280	148	47	10		2306	Drs. Woodward.
Bloomingdale,	23½ " " 1844	115	627	450	264	147	56	22	3	182	1866	Earle.
McLean,	1819 " 1833	70	352	264	191	91	38	9			1015	Wyman.
Frankford,	1817 " 1841	39	240	178	148	102	53	18	5		783	Evans & Earle.
"	1842 " 1845	25	30	32	24	17	8	4	1		141	Evans & Worth-
Pennsyl. Hosp'al,	" 1845	39	274	188	145	65	39	19			769	Kirkbride[ingt'n
Hartford Retreat	7 years	19	107	73	54	20	6	4			283	
"	1844 & '45	17	54	61	41	29	15	2	1	13	233	Butler.
N. Hampshire st	1 yr to 1845	7	17	29	13	15	4	3			88	McFarland.
South Boston,	1 yr " 1845	1	12	11	6	1		1			32	Stedman.
Total.		483	2337	1884	1334	767	367	129	20	195	7516	

The decade from 30 to 40 is no longer the maximum. On the contra-

* Between 90 and 100 years. 1 not included in the table.

ry, it is exceeded by that from 20 to 30, by 22.98, or a minute fraction less than 23 per cent.

Taking the numbers in these two decennia as the first terms, the subjoined equation is produced

2337 : 1884 :: 100 : 80.61.

Hence, of 7516 patients, for each *hundred* who were between 20 and 30 years of age at the time of admission, there were but *eighty* and a fraction between the ages of 30 and 40.

The several periods of life, arranged according to the frequency of insanity, as exhibited by the table, are as follows :

1st	from	20	to	30	Years.
2d	"	30	"	40	"
3d	"	40	"	50	"
4th	"	50	"	60	"
5th	under	20			"
6th	from	60	"	70	"
7th	"	70	"	80	"
8th	"	80	"	90	"

It will be perceived that there is a regularly progressive decrease from the decennium 20 to 30, through all the more advanced stages of life.

It might now appear that the original proportion is answered with sufficient certainty ; for if the maximum of *admissions* be during the period from 20 to 30 years, then, for a stronger reason, must the maximum of *first attacks* be in the same period.

But figures are more definite, if not more positive and convincing, than the deductions of *à fortiori* reasoning. I therefore proceed to embody all the statistics bearing directly upon the subject.

AGE AT THE TIME OF FIRST ATTACK.

Asylum.	Time.	Under 20 years.	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	Unknown	Total.	Authority.
Mass. state,	1833 to 1841	156	414	309	220	115	59	24	1	61	1359	Drs. Woodward.
N. York state,	3 yrs. 1845	105	313	217	121	59	26	3			844	Brigham.
Penn. Hospital,	" 1845	91	334	167	124	39	10	4			769	Kirkbride.
Ohio state,	7 yrs. to 1845	69	303	174	98	38	9				691	Awl.
Maine state,	5 yrs. to 1845	85	168	110	72	35	11	5			486	Bates.
West. Virginia,	all in 1845	47	79	47	24	7	4			28	236	Stribling.
Frankford,	1842 to 1845	40	44	24	18	9	2	3	1		141	Evans & Worth-
Connect. Retreat,	Admit'd 1845	17	35	31	14	10	3	2		16	128	Butler, ington
N. Hamp. state,	1 yr. to 1845.	11	22	27	11	10	4	3			88	McFarland.
Total.		621	1712	1106	702	322	128	44	2	105	4742	

"The tables are turned" now, most emphatically. The number from 20 to 30 is greater than that from 20 to 30, by 54 *per cent.* By a similar equation to that above adopted, we have

1712 : 1106 :: 100 : 64.59.

So that, of 4762 cases, for every hundred between 30 and 40 years, as the time of first attack, there were but *sixty-four* and a fraction between 30 and 40. By a similar process, the ratio of all the periods is found to be as follows :

1st	from	20	to	30	100
2d	"	30	"	40	64.59
3d	"	40	"	50	41

4th under		20			36 27
5th	from	50	to	60	18.82
6th	"	60	"	70	7.47
7th	"	70	"	80	2.57
8th	"	80	"	90	0.11

The number of cases constituting the basis of this calculation, is sufficiently large to insure a pretty close approximation to perfect accuracy in the result. Future investigations may, and undoubtedly will, change the exact relative numbers of the several periods, but it is hardly possible that this change should be so great as to alter the relative position of the periods themselves, as they are here arranged.

The source of error mentioned in the remarks upon the table of European patients exists in most of the records of the American institutions, and consequently in the foregoing tables. In the statistics of the Bloomingdale Asylum, however, no patient, how many times soever he may have been received, is reckoned more than once; and the age of each is taken at the time of first admission.

Having demonstrated the predominance of the number of first attacks of insanity in the epoch from 20 to 30 years, it remains to be proved whether the same be true of the sexes individually, or whether, in this country, as in Europe, according to several of the authors quoted in the early part of this essay, the maximum number of attacks in females is at a later period, or in a higher decennium of life.

The important constitutional revolution occurring in the system of females, generally, in the United States, between the ages of 40 and 50, is known to be a frequent cause of mental disorder. Hence, as there is no balancing or equivalent cause acting at the same period upon males, it must necessarily be inferred that the average age at first attack is greater among the former than among the latter.

The table subjoined contains the statistics of five of the Asylums included in the foregoing table of age at first attack. The numbers of each sex are placed together.

AGE AT FIRST ATTACK.

MALES.

Asylums.	Under 20 Years.	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Unk.	Total.
Penn. Hospital,	50	205	105	57	20	6	4		447
Maine State,	55	90	62	37	23	6	5		278
Ohio State,	29	181	89	51	16	7			373
Western Virginia,	37	47	31	10	4	3		18	150
N. Hamp. State,	5	13	10	4	5	3	2		42
Total,	176	536	297	159	68	25	11	18	1290

FEMALES.

Asylums.	Under 20 Years.	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	Unk.	Total.
Penn. Hospital,	41	120	62	67	19	4			322
Maine State,	30	78	43	35	12	5			208
Ohio State,	40	122	65	47	22	2			318
Western Virginia,	10	32	16	14	3	1		10	86
N. Hamp. State,	6	9	17	7	5	1	1		46
Total,	127	370	228	170	61	13	1	10	980

According to the numbers in the table of females the several decades occupy the same relative position; they follow the same gradation as in the table where the cases of both sexes were combined. The influence of the cause just mentioned as operating upon females, is observed by the relative increase of numbers between the ages of 40 and 50. In the table of both sexes the period from 40 to 50 is to that from 20 to 30 as 41 to 100, whereas in the table of females it is as 46 to 100.

Among the males, in the last table, the period under 20 years occupies the *third* rank, while in the table for both sexes it occupies the *fourth.*

Now, although it may be demonstrated beyond a doubt that the greatest number of *first attacks* of mental alienation is between the ages of 20 and 30, yet it does not necessarily follow that the *greatest liability* to the disease exists at the same period. In order accurately to determine this question, the number of attacks in each decennium must be compared with the number of persons of corresponding ages in the community.

By the foregoing table it appears that the number of first attacks between 20 and 30 years is 54 per cent. greater than that between 30 and 40. But if the same predominance of 54 per cent. exist in the population of the community, then the *liability to insanity*, in the two decennia, is *equal;* and if that predominance rise higher than 54 per cent. in the period from 20 to 30, then the liability to insanity is proportionably less than between 30 and 40. If, however, it fall below 54 per cent., the liability is greatest in the period from 20 to 30 years.

Esquirol, having classified 12,869 cases of insanity according to age, compared them with a similar arrangement of a population of ten millions, and thence arrived at the following remarkable conclusions:—

"The farther man advances in life, the greater is his exposure to the loss of reason. There are fewer insane from 20 to 30 years, comparatively with the population at that period of life. There are more cases from 30 to 40 years, although the population is less; from 40 to 45 years the population is diminished, but the relative number of insane is augmented. The same is true from 45 to 50 years. The relative augmentation of the number of lunatics is still more strongly marked from 50 to 55 years. From 70 to 75, and from 75 to 80, the relative number of insane is enormous."*

Therefore, according to this author, the *greatest liability* to mental disorder is from the *seventy-fifth* to the *eightieth* year of life! I am strongly convinced that the elements of the mathematical process by which this result was obtained, were greatly vitiated by including the age of many patients at a period long posterior to the time of first attack.

MM. Debouteville and Parchappe compare the ages of the patients at St. Yon—where the maximum number at the time of admission was from 30 to 39 years—with the population of the Department of *La Seine inférieure*, and find that, relatively to the population in each decennium, the greatest number of admissions was in the period from 40 to 49 years.†

Dr. Aubanel and Thore enter into a similar comparison of 3,869 cases

* Des Maladies Mentales, Vol. 2, p. 675.
† Notice Statistique sur L'Asile des Alienés, &c., p. 21-2.

admitted into the Bicêtre from 1831 to 1839, with a population of 10,000 in the community, and arrive at the conclusion that the greatest number of admissions, relatively to the population, was in the period from 30 to 40 years.*

Dr. Thurnam, in his valuable work recently published, computes the proportion, relative to age, between the patients admitted into the Middlesex County Asylum, from 1840 to 1844, and the population of England and Wales, in 1841. He finds that proportion the greatest in the decade from 30 to 40 years.†

The only investigations of this kind, in the United States, that have fallen under my observation, are those of Drs. Bates and Kirkbride.

The gentleman first named assumes the admissions into the Asylum at Augusta, and the census of the State of Maine, as the elements of his calculation, the age of the patients being taken at the time of first attack. His deductions are, 1st, that in males the greatest number of first attacks, relatively with the population, is during the age from 30 to 40 years; and, 2d, that in females the greatest number is between 20 and 30 years.‡

Dr. Kirkbride's calculation is based upon the admissions into the Pennsylvania Hospital for the Insane and the census for 1840 of the State, and the results show that the number of first attacks, as compared with the population, is at is maximum in the period from 20 to 30 years.§

By thus comparing the totals in the foregoing table of "Age at the time of first attack" (p. 85) with the whole population of the United States in 1840, the following results are produced:—

The period of greatest liability is from 40 to 50 years.

	For every 100 cases between			40	and	50	years
there are	99.1	"	"	20	"	30	"
"	98.	"	"	30	"	40	"
"	78.8	"	"	50	"	60	"
"	55.8	"	"	60	"	70	"
"	42.	"	"	70	"	80	"
"	29.	"	"	under		20	"
"	00.07	"	"	80	and	90	"

By comparing the totals of the same table with the population of the State of New York, the maximum of first attacks would be between 20 and 30 years; and—

	For every 100 cases between			20	and	30	years
there would be	98.	"	"	40	"	50	"
"	94.3	"	"	30	"	40	"
"	79.3	"	"	50	"	60	"
"	56.1	"	"	60	"	70	"
"	40.3	"	"	70	"	80	"
"	31.	"	"	under		20	"
"	00.06	"	"	80	and	90	"

Finally, by a similar process with the cases of the Utica Asylum and

* Récherches Statistiques, p. 39.

† Observations and Essays on the Statistics of Insanity (p. 163). London. 1845.

‡ Sixth Annual Report of the Superintendent of the Insane Hospital, Maine, 1845.

§ Report of the Pennsylvania Hospital for the Insane, for 1845.

the population of the State of New York, the greatest number of first attacks is found to be between 30 and 40 years; and—

	For every 100 cases	between	30	and	40	years
there are	99.1	"	20	"	30	"
"	86.9	"	40	"	50	"
"	78.7	"	50	"	60	"
"	61.7	"	60	"	70	"
"	28.4	"	under		20	"
"	14.9	"	70	and	80	"

The last of these three calculations must necessarily be the most nearly true, because the cases upon which it is based are compared with the local population from which they were almost exclusively derived. By that, it appears that the greatest liability to insanity is, in the State of New York, during the period from 30 to 40 years of age; but the predominance of that liability over the same in the period from 20 to 30 years is very slight.

In computing the comparative number of cases under 20 years of age, in the three tables, the population under 10 years of age was rejected, and the cases compared with the population from 10 to 20 years. This was thought to be the more accurate method, since there are very few cases of insanity commencing at a period of life under ten years of age.

ART XIV.—*Statistics of Private Obstetric Practice.* By JAMES C. BLISS, M.D.

IT will, I trust, be a matter of interest to have presented to the readers of the Journal, the Statistics of a number of cases in Private Obstetric Practice, the results of which may serve as a basis for some practical deductions. I am not aware that anything of the kind has been given to the public in this country; and our public Institutions, all comparatively in their infancy, and have not as yet been made available for this purpose. In presenting these details I am aware that the materials are too meagre to give that certainty to general results, which are to be derived from the more ample and abundant means afforded by the large Institutions of Europe; and which might be obtained also, from a wider field of observation in private practice; but it may be the means of directing the profession to this field of inquiry, and aid, to some extent, the researches of any who may be led hereafter to pursue the subject on a more extended scale.

Nothing can be more unphilosophical, and more likely to bewilder, and lead to error in the practice of medicine, than modes of treatment founded on statistical results. It is calculated to retard legitimate inquiries, and the progress of sound medical science; and it is not a little remarkable, that some of the most distinguished and popular members of the profession in our day, have deserted the only safe and rational path of investigation, to deduce systems of practice from principles so extremely fallacious. But while there are conclusive objections to our attempting to arrive at truth in the practice of medicine in this way, the same does not hold good in the obstetric art. Many of our rules of practice, if not

founded upon, are at least confirmed by these investigations. The value of the excellent work of Dr. Collins, of Dublin, is greatly enhanced by the very precise, accurate, and elaborate details and tables contained in his volume. It has been through the influence of this example of Dr. Collins, that I have been led to prepare this paper. The facts contained in such inquiries have a bearing on many branches of human knowledge, and when little items serve to swell the aggregate, they are not without their importance; and in this point of view, the motives for presenting this paper will be appreciated.

I have made a record, more or less full, of *Eight hundred and twenty* cases of delivery. Of this number, 815 were born in the following months, viz.,

In the month of	January, -	52
" "	February, -	63
" "	March, -	74
" "	April, -	57
" "	May, -	62
" "	June, -	71
" "	July, -	65
" "	August, -	81
" "	September, -	75
" "	October, -	80
" "	November, -	72
" "	December, -	63

It will appear from this table, that the greatest number of births occurred in the month of August, and the fewest in January. In the former month they amounted to 81, while in the latter there were but 52. In the month of October there were 80, in September 75, and March 74. These facts show that the greatest number of conceptions occurred in the months of December, February, January, July, March, and October; and in the order in which they are named.

The sex of *Seven hundred and ninety-seven* children has been noted. Of this number 395 were males and 402 females. This shows a summing up considerably at variance with most report, the number of male children generally preponderating from three to ten per cent over the other sex. According to the registry of Dr. Collins, a little more than 8-15ths of the total births were males.

The presentation in *Seven hundred and seventy-one* deliveries is recorded. Of this number there were:

Natural presentations,	-	738
Breech "	-	15
Funis & Breech "	-	1
The foot "	-	8
The face "	-	1
The face towards the pubis		7
The arm and abdomen		1

It will appear from this, that in about one case in 22 the presentation was preternatural. The proportion in the Dublin Lying-in Hospital, according to Dr. Collins, was one to every thirty, but it will be remarked that in his Treatise he does not include presentations of the face, and the face towards the pubis, among preternatural presentations. Should these be included, the proportions will not probably very materially differ.

Of the 820 cases, *forty* are noted as being premature births. That is, about one in twenty were born before the full period of pregnancy was completed.

Out of the same number, viz., 820, *twenty-one* were born dead. This shows a small fraction over one still-birth to every thirty-nine deliveries. In the Dublin Lying-in Hospital, a little short of every 15th child was born dead. This discrepancy between Hospital and private practice is doubtless owing to the difference in condition and character of the patients.

The Funis was around the neck once in 127 cases.
" " " twice in 21 "
" " " 3 times in 6 "
" " " four in 1 "

A little over every fifth child, according to this record, had the cord around the neck at birth.

In *seventy-nine* cases of the 820, *the membranes broke* before or at the accession of labor. The duration of labor, in seventy-five of these cases, was as follows, viz:

One hour	1	Twelve hours	9
Two "	2	Thirteen "	1
Three "	4	Fourteen "	3
Three and a half	1	Fifteen "	1
Four hours	6	Sixteen "	2
Four and a half	1	Eighteen "	2
Five hours	8	Twenty "	3
Six "	4	Twenty-four	2
Six and a half	1	Thirty "	1
Seven hours	3	Thirty-two "	1
Eight "	3	Thirty-four "	1
Nine "	2	Thirty-six "	3
Ten "	1	Forty-three "	1

The average duration of labor, under these circumstances, was $10\frac{3}{4}$ hours. This shows that this occurrence did not very materially retard the progress of parturition.

The pregnancies of 690 cases are recorded.

Of the First pregnancy there were 184 cases.
" Second " " 138 "
" Third " " 116 "
" Fourth " " 78 "
" Fifth " " 60 "
" Sixth " " 26 "
" Seventh " " 32 "
" Eighth " " 10 "
" Ninth " " 14 "
" Tenth " " 12 "
" Eleventh " " 10 "
" Twelfth " " 5 "
" Thirteenth " " 5

This shows that a fraction over every third birth, was the first child.
Every fifth " second "
A little short of every sixth " third "
A little less than every ninth " fourth "

Every	eleventh and $\frac{5}{10}$		fifth child
"	Twenty-sixth and $\frac{1}{2}$		sixth "
"	Twenty-first and $\frac{1}{2}$		seventh "
"	Sixty-ninth	"	eighth "
"	Forty-ninth	"	ninth "
"	Fifty-eighth	"	tenth "
"	Sixty-ninth	"	eleventh "
One hundred and thirty-eighth			twelfth "
One hundred and thirty-eighth was also the			thirteenth "

Of the whole number, two only of the Fœtuses were *monsters.*

There were, out of the whole number, *eight twin births.* This shows a proportion much less than occurs in the Lying-in Hospitals in Europe. The number, as above stated, is *one* to every *one hundred and two* cases, while in the European reports it is as follows, viz:

In France	one to every	ninety-five births
In Germany	"	eighty "
In England	"	ninety-two "
In Scotland	"	ninety-five "
In Ireland	"	sixty-three "

See Collins' Treatise, Am. Ed., p. 153.

The duration of labor is noted in 809 cases, and is as follows, viz:

Ten minutes	1 case	11 hours	4 cases
$\frac{3}{4}$ of an hour	1 "	12 "	13 "
1 "	3 cases	13 "	3 "
$1\frac{1}{2}$ "	4 "	14 "	14 "
2 hours	4 "	15 "	1 "
$2\frac{1}{2}$ "	4 "	16 "	2 "
3 "	6 "	17 "	4 "
$3\frac{1}{2}$ "	5 "	18 "	6 "
4 "	13 "	19 "	2 "
5 "	8 "	21 "	1 "
6 "	18 "	24 "	5 "
$6\frac{1}{2}$ "	1 "	26 "	1 "
7 "	4 "	29 "	1 "
$7\frac{1}{2}$ "	1 "	$30\frac{1}{4}$ "	3 "
8 "	7 "	32 "	1 "
$8\frac{1}{2}$ "	1 "	36 "	1 "
9 "	10 "	37 "	1 "
10 "	3 "	43 "	1 "
$10\frac{1}{2}$ "	1 "	46 "	1 "

The average duration of labor, in these 809 cases, was a fraction over ten hours.

Out of the whole number *three* were cases of *instrumental delivery.* The proportion is *one* to every *two hundred and seventy-third* case. This shows a proportion much less than occurs in the European Hospitals, or in the private practice of those from whom we have reports. An interesting table is given in Dr. Collins' Treatise, to which reference has been so frequently made. The following is the average proportion of instrumental deliveries which he has collected from different sources:

In Dresden, Dr. Carus delivered with instruments		1 in every	13
" Giessen, Dr. Ritger	" "	1 "	9
" Berlin, Dr. Kluge	" "	1 "	15

Cologne—Drs. Minden and Merrem delivered with instruments,			1	in every	12
Breslau—Professer Andrée delivered with instruments,			1	"	35
Heidelberg—Nagelé,	"	"	1	"	28
Magdeburg—Dr. Voigtel,	"	"	1	"	5
Breslau—Dr. Küster,	"	"	1	"	36
Marburg—Dr. Casper Siebold,	"	"	1	"	9
Vienna—Dr. Boer,	"	"	1	"	96
Paris—Mad. Boivin,	"	"	1	"	183
London—Dr. Merriman, in private practice,	"		1	"	98
" Dr. Bland, Westminster Gen. Dispensary,			1	"	158
" Dr. A. B. Granville, same institution,			1	"	80
Dublin—Drs. Cusack and Maunsell, Wellesley Disp'y,			1	"	34
" Dr. Beatty, New Lying-in Hospital,			1	"	99
" Dr. Joseph Clark,	"	"	1	"	162
" Dr. Collins,	"	"	1	"	114

In the three cases in which instrumental delivery was resorted to, the forceps were used twice, and the perforator and crotchet once.

The first case in which forceps were employed, labor was rendered tedious by narrow pelvis, and the face of the child being towards the pubis. Delivery was accomplished at the end of 33 hours, the child being dead. The mother recovered slowly. An abscess formed around the hip some weeks after her confinement, which was attended with fever and great debility. Her health was ultimately restored, and she subsequently bore a living child without any untoward circumstances.

The second case was that of a lady 42 years of age, with her first child. She had been attended by a practitioner 81 hours previous to my being called. The head was so far advanced that delivery was readily accomplished. The child was living, notwithstanding the long continued pressure it had suffered. The mother also had a good getting up, and without any unfavorable symptom intervening.

The third case was that of a patient laboring under violent puerperal convulsions, with whom all the usual remedies had been employed without success. Delivery was attempted with forceps, which failed in consequence of violent convulsions being brought on whenever any effort was made with the instrument. The child was delivered by diminishing the head and using the crotchet. The cellular tissue of the patient was enormously distended by dropsical effusion. The patient was not seen by the writer after the birth of the child, she being in charge of another physician, but he understood she died some days afterwards of effusion in the chest.

In the case of presentation of arm and abdomen, the child, which was large, was turned and delivered by the feet. It was born dead. The mother recovered without any unfavorable circumstance following.

Four cases were preceded by *puerperal convulsions.* This is in the proportion of one to every 205 births—while, under the mastership of Dr. Collins, only one in every 555 occurred in the Dublin Lying-in Hospital.

One of the cases is detailed under the head of instrumental deliveries. In every case, it occurred with the first child. In each instance, also, there was infiltration in the cellular membrane. In one case only was

the urine examined, and in this it was found to be albuminous. The patients, with the exception of the first noticed, were relieved of the convulsions before delivery, by bleeding, stimulating injections, purgatives, and counter-irritants. The children were all born dead: two were in a state of decomposition, and there was reason to believe all died previous to the attack. The patients all did well, with the exception of the one described under the head of instrumental deliveries. Œdema existed in these cases previous to the occurrence of convulsions, and it was considerable, except in one instance, which does not correspond with the observations of Dr. Dewees.

In the detail of cases in my note book, several are noticed in which convulsions were threatened, in all of which there were bloated countenances, and more or less œdema in other parts of the body. In one of these cases the urine was albuminous. These facts would seem to show that Dr. Lyman, whom Dr. Dewees quotes, is correct in stating that œdema is a precursor of convulsions.

The detection of albumen in the urine of females, threatened with or laboring under this disease, has thrown much light on the pathology of the affection; and further inquiries will probably remove much obscurity, which, no doubt, has led practitioners, in many instances, to confound hysteria with this formidable complaint.

In one of the cases, in which the attack occurred in the seventh month, labor came on, and the fœtus was delivered three days after the convulsions had ceased. The child was in a state of partial decomposition.

The observation, that convulsions more commonly occur in the first labor than in subsequent ones, appears to be confirmed by these cases; and likewise, that they happen more frequently when the child is dead, although the latter observation is questioned by some of our best writers. In all the cases the presentation was natural.

The *placenta* was attached over the mouth of the uterus in *three instances*. This is in the proportion of one to every 273 cases.

In one instance, the edge of the placenta was over the mouth of the uterus. The patient had repeated hemorrhage for two months previous to delivery, but it was at no time alarming. Labor commenced with profuse flooding, followed by syncope. The vagina was plugged, which arrested the hemorrhage till the head advanced so as to make pressure. The mother was safely delivered, but the child was dead and exceedingly blanched.

In the second case, I was called to a patient who was attended by a popular female. She had been flooding for ten hours,—was in a state of extreme exhaustion, and swooned immediately after I entered her room. The hand was passed up through the edge of the placenta—the feet brought down, and the child delivered in three minutes from the commencement of the operation. The child was born alive, but the mother, although she lost less than a pint of blood at the time, died at the end of an hour and a half after the birth of the child.

In the third case, the patient was taken with flooding on Sunday, but not profuse. On Wednesday, a profuse hemorrhage suddenly occurred. A physician was called in, who found, as he stated, the os uteri dilated to the size of a shilling. When seen an hour afterwards by the writer, the flooding had been so great and the exhaustion so extreme, that the patient was almost moribund. On examination, a small portion of the

placenta was found protruding from the mouth of the womb. The feet of the child were brought down and secured by a tape, and attempts made to deliver in this way, but decomposition had made such progress that the feet were immediately separated from the legs; and, notwithstanding the relaxation which had taken place in the mother from the great exhaustion, it was found difficult to effect delivery on account of the condition of the fœtus—the abdomen being very much distended by effused fluid in its cavity. The finger was passed through its parietes, through which opening the fluid rushed out. The finger was then hooked over the pelvis, and in this way the body was brought down and delivered. The patient survived but about twenty minutes. The loss of blood was inconsiderable at the time of delivery.

The whole of the cases might be presented in detail with some other particulars not adverted to above, but it would be extending this paper beyond what would be desirable for the Journal. The arrangement and bringing together all the various particulars has cost some labor, but the writer will be amply compensated if it shall lead other members of the profession to give to the public similar inquiries and observations.

There is one thing that perhaps ought to be adverted to in comparing the results given above, with those of public institutions, and that is, that most of the patients were among a class of females who could command the comforts and conveniences of life, and were therefore less exposed to accidents than those less favorably situated.

ART. XV.—*Indigenous Medical Botany*, No. 5. By STEPHEN W. WILLIAMS, M. D., late Professor of Materia Medica, &c.

THE TRILLIUMS.—Forty-five species of this elegant genus of plants are mentioned in the New Edinburgh Encyclopædia. Doubtless there are many more, as Rafinesque enumerates thirty-three species in the United States, and a much greater number of varieties than the species. I have seen but three species in my native town of Deerfield Rafinesque thinks that this beautiful genus of plants is peculiar to North America, but according to the Encyclopædia mentioned above, very many species of it are found in various parts of the globe, from the frozen Alpine mountains to the torrid zone. In fact, there is scarcely a portion of the earth in which it is not to be found.

The three species found in this town, grow in marshy localities, at the foot of mountains, in the woods, and in swamps. They grow indiscriminately together, though the purple variety, or species, is the most common, and its root is considered to be the most powerful, but for what reason I am unable to say; the crythocapum or pictum, is the next most abundant, and the cernuum is scarce. The simplicity and elegance of these plants, blossoming early in the season, have long attracted the notice of botanists. But few of our plants surpass them in beauty. Rafinesque thinks he was the first to introduce this fine genus into the Materia Medica. I, however, published an article on it, in the New England Journal of Medicine and Surgery, in the year 1820, ten years before his Flora was published, and it was noticed empirically long before that period.

The genus Trillium belongs to the sixth class and third order of the Linnæan arrangement, and to the twelfth division, or order Asparagi, of the natural order of Jussieu, and to the order Melanthaceæ of Lindley. Although the generic term of Trillium is of Linnæan origin, it is not known for a certainty from whence it received its derivation. Probably it received its name from the fact that the calyx and petals consist of three leaves, the cells of the fruit and the stigmas are three in number, and there are three leaves.

The generic description, as given by Rafinesque, is as follows:—

Genus Trillium Perigone double, macescent, each three-parted; exterior calciform, interior corolliform. Six stamina inserted at the base of the segments, nearly equal, anthers linear. Pistil oval, three-linear; stigmas (seldom in style); berry three-celled, polysperm. Constant habit of the whole genus.

Vulgar Names. Birthroot, Broadland, Bethroot, Rattlesnakeroot, Wakerobin, Coughroot, Indian balm, Ground lily, Jewsharp, Indian shamrock, Parisroot, Truelove, &c., &c.

1. *Trillium erectum, Linn, sp. pl.* 484. *Torrey, fl.* p. 376. T. rhomboidum *Michaux*, fl. 1. 215. *T. atropurpureum, Bot. Mag.* t. 470. T. *fœtidum, Par. Lond.*, to 35 (Lindley.)

Specific description. Rhizoma large, primrose, with thick horizontal fibres. Stem a foot or more in height, sheathed at the base. Leaves large, abruptly acuminate, closely sessile. Peduncles about half as long as the leaves, inclined to one side. Flowers large, a little nodding. Leaflets of the calyx oblong, lanceolate, acuminate. Petals dark purple, nearly as broad again as the calyx. Filaments distinct; anthers linear, stigmas sessile, spreading. Berry large, nearly black. (*Torrey.*) Flowers in May.

2. The *Trillium Erythrocarpum* of Michaux is the *pictum* of Pursh, and the *undulatum* of Willdenow. Elliot's specific character is:—Peduncle declining; petals oval, lanceolate, acute, recurved, twice as long as the calyx; leaves ovate, acuminate, rounded at base, abruptly attenuate. Leaves very wide for their length. When large almost cordate, as mentioned by Michaux. *Peduncle* nearly an inch long. Corolla white, with purple vines at base.

3. *Trillium Cernuum.* This, according to W. P. C. Barton, is the Trillium cernuum of Prush, Muhlenburg's Cat. and Herbarium, Elliot, Nottell, Barton's Comp. fl. Phil: but not of Linnæus, Catesby, Michaux, or Walter.

Specific Character. Peduncle rounded, petals lanceolate, acuminate, flat, reflected, as long as the calyx, leaves dilated, rhomboidal, abruptly acuminate, on short petioles. (Pursh.) Root perennial. Stem simple, erect, from one to two or two and a half feet high, cylindrical, siskin green above, dull purple below; base white invested with sheaths. Leaves three-drooping, terminal rhomboid, ovate, narrow at base, sessile, or nearly so, terminating at their apices in abrupt points, deeply veined, veins prominent and numerous below, yellow green above, under surface shining. Peduncle from one half of an inch to an inch, rarely an inch and a quarter long, turned downwards beneath the two leaves, and concealing the flower under one. Calix dependent, consisting of three petaloin, acuminate, lanceolate, or lanceolate-ovate segments, the margins approaching by reflected convolutions near the apex. Petals three, white, turbinate or turned upwards in a direction contrary to the calyx

leaves; also acuminate, occasionally one half greenish, like the petaloid calyx. Anthers constantly six in number, a quarter of an inch long, oblong, white, with yellow pollen on the margin. Stigmas three, prismatic, and convoluted at the end, tinged with carmine, projecting beyond the anthers, and being aggregated into a solid mass at base. Berries purple. Grows in damp rocky woods or grottoes near rivulets, delighting in rich soil throughout the Union. Flowers in the beginning of May—to the south in April. (W. P. C. Barton, Flora of North America—tome two, with a beautiful colored engraving.)

Medical Use of the Trilliums. They have been used empirically, if not in regular practice, as I have mentioned above, for many years. As I am for producing information from *any source*, I will notice, in the first place, what that noted Herbalist, Henry, of New York, said of it in his Herbal, published as long ago as 1812, with plates. He considers the root as powerfully astringent, and says he has found it of great efficacy in violent uterine hemorrhages, hematuria, or bloody urine, in obviating gangrene, and in curing carbuncles. He says he has been instrumental in saving the life of a sailor who was taken with violent pain in his penis, and made bloody water continually. After evacuating him thoroughly, his prescription was to take a teaspoonful of the powder of the root four times a day. Two or three days afterwards, he said he had the happiness to find him entirely well. The manner in which he prepares it is as follows. Preparation.—In all immoderate flow of the catamenia, spitting or discharging of blood, the patient may take one teaspoonful three times a day, in a teacupful of the tea, made of yarrow or St. John's root, after bleeding, and using cooling laxatives. This, he says, is always effectual. He also says :—"For the benefit of gentlemen of the college, and the medical society, as well as private individuals, I will insert the following new discovery, which obviates the gangrene, and quickly cures carbuncles. A case.—I was called to visit a French lady living in Roosevelt street, New York, who had a carbuncle on her arm as large as a crown piece. It was of a fiery red color, and sharp watery ichor, or water running. I made a poultice of equal parts of beth and bloodroot, powdered fine, and mixed with honey, and bound it over the carbuncle, with directions for renewing it every two hours, and taking a purge. When I called the next day, I found, to my great satisfaction, that the carbuncle was killed, and only a brown mark was left, and has never returned." This poultice, he continues, is also a certain cure for old putrid ulcers, obviates the gangrene or mortification, and will prevent the cutting off of many limbs in our hospitals, and on board ships of war. This work of Henry is written in so slovenly a manner, is so empirical, and unscientific, and is so calculated to mislead the young botanist, that it is presumed it is not in the hands of many regular and scientific physicians.

I have been surprised that this plant has not been more noticed by writers on the Materia Medica. It has been employed by many herbalists, and by the Indians of some of the tribes in North America, &c. As there is so little dependence to be placed upon the empirical practice of such pretenders, it may account for its not being introduced more generally into regular practice. The Botanic physicians make some use of it in their practice. I have used in my practice, the three species found growing in this town, the erectum, the erythrocarpum or pictum, and the cernuum. Rafinesque mentions the species most commonly employed,

as the Trillium mutans, pictum, grandiflorum, medicum, longiflorum, and rotundiflorum. He says they are all astringent, restringent, pectoral, antiseptic, alterative, &c. The smell of the roots somewhat resembles cedar. They are slightly aromatic, like copaiba. Salivation is induced by chewing the roots; the tears flow, and the throat is irritated. Then follows a sensation of coolness throughout the bodily frame. They are useful astringents in all kinds of hemorrhages, and they are successfully employed in tumors, putrid ulcers, carbuncles, &c. Their astringent properties are milder than geranium or Erignon, but they are not so heating. (Rafinesque.) Rafinesque further says, "as a tonic they appear very beneficial, nay, a certain cure, with bloodroot for inflamed carbuncles and ulcers, after a purge; it is said they obviate, or prevent gangrene and the need of cutting off mortified limbs. Even the leaves are useful applied to tumors. In female complaints, such as leucorrhœa, menorrhagia, after parturition, they act as good restringents; the Indians value them both in Canada and Missouri. They say in Canada, that the roots chewed, will cure instantly the bite of rattlesnakes, both in man and cattle. Mr. Hawkins saw an Indian make the experiment for a gill of rum; how it acts was not stated. The Indians of Missouri call them *Mochar Newachar*, meaning hot and cold; it is their palliation for consumption. The sessile species are called *Jewsharp* in Kentucky, and used for sores and ulcers. The Trillium tinctorum is one of the red paints of the Western Indians; the roots stain the hands, and dye red with alum."

I published the substance of the foregoing remarks in the New England Journal of Medicine and Surgery, in October, 1820. I then hoped I should draw the attention of my professional brethren toward the Trillium, and I hope that the communication in this Journal will have the same effect. I am happy to say, that several physicians in this neighborhood are using it successfully in hemorrhages.

In all kinds of active hemorrhages, I generally begin with doses of one drachm of the powdered root for an adult, in molasses or sweetened water, and repeat the dose according to the urgency of the symptoms. In extreme cases, I follow the prescription as often as once an hour, till the bleeding ceases. In common cases, three doses in twenty-four hours will be sufficient. I give a cathartic after the use of the powder, though the constipation is not so great as after the use of cerassa acetate and some other astringents. My friend, Dr. Alpheus F. Stone, of Greenfield, a highly respectable practitioner, uses pounds of this medicine in his practice every year, and thinks it is not surpassed by any article in the Materia Medica. He has seen great and decided benefits from it in menorrhagia and hæmoptysis, in repeated instances. Other practitioners in this vicinity make much use of it.

It is not exclusively for its power as an astringent, that it is recommended to the consideration of physicians. It seems to be possessed of the property of arresting the progress of cutaneous eruptions in an eminent degree. Dr. Stone gave it to a patient laboring under menorrhagia, who had likewise been afflicted for years with an universal scaly eruption, which at times was very red and itching, and appeared to be of the scrofulous kind. She had made use of various remedies for it, to little or no effect. After using the powder a few days, the eruption disappeared, and the surface of the skin was left perfectly smooth. In a few weeks the eruption returned, when she again resumed the use

of the medicine, which in a short time cured the complaint. He has, likewise, used it with success in the case of his little son, who for some time had been afflicted with scrofulous eruptions. I cannot explain the *modus operandi* of this medicine in this complaint. It, however, deserves further trial from physicians.

By the common people this root is used in parturition, and it is believed by them to be of great efficacy in expediting the birth of the child. It is generally known by the name of birthroot, a corruption of beth.

The root of these plants, which is the only part used as a medicine, has not been subjected to chemical analysis. When green, it is extremely caustic and pungent to the taste, but like the genus Arum, wakerobin, or wild turnip, it loses much of its causticity in drying. The dried root does not manifest much astringency to the taste.

The proper time for gathering it, is when it is in blossom, which, in this climate, is in the month of May. The roots would probably be more efficacious, like those of most perennial plants, if collected late in the season, but the plants drop their leaves soon after flowering, and it is impossible to find them long after this period. They should be washed, strung upon twine or thread, and dried in the sun. Some divest the root of its fibres, but it is unnecessary, for they are equally efficacious with the body of the root.

Deerfield, Mass., Dec. 1, 1846.

PART SECOND.

Critical Analysis.

ART. XVI.—*A Treatise on Diseases of the Air Passages: Comprising an Inquiry into the History, Pathology, Causes, and Treatment, of those Affections of the Throat called Bronchitis, Chronic Laryngitis, Clergyman's Sore Throat, etc., etc.* By HORACE GREEN, A. M., M. D., etc. Wiley & Putnam, 161 Broadway.

IN the present state of International Copy-right Law, when the best foreign works can be had for nothing, we hail with pleasure any attempt on the part of the profession, to contribute towards building up a medical literature of our own; and especially, when so well sustained and meritorious as the present. The profession, in this country, has been absolutely compelled by the force of circumstances,—matters connected with the bookselling trade,—to depend on foreign sources for a supply of professional reading; and, because our government has thought proper to allow *free-trade* in books, and in nothing else, we have been unjustly reproached by foreigners, as having no medical literature of our own, and of deriving our supplies exclusively from across the Atlantic. No one can doubt that we have talent, learning, industry, all the intellectual capital needed, to compete in the race of medical authorship with any nation on the globe; but, at present, the odds are too fearful to allow us to enter the race; we cannot live on air; and booksellers are not all patriots and saints, ready to reward home merit, irrespective of their own interests. If they can procure an article equally good, for nothing, can any one blame them for not paying liberally for the same article, because it is of home manufacture?

Take an example. Suppose any other articles of manufacture, requiring great experience, talent, and research, could be imported, and by some process of reduplication, furnished here for less than half the original cost, can any one believe that an American manufactury of the same kind of article could for a moment compete with it?

Some of our writers, who have, in the want of other kinds of encouragement, been tempted to make additions to foreign works, the better to adapt them to the existing wants of the profession at home, have also been reproached, not only in foreign journals, but sometimes even in our own, for consenting to act so subordinate a part, and stand gentlemen ushers to foreign writers; while such are their comparative merits, that were justice done, they would, doubtless, often reverse their relative positions.

Although we have not many original medical authors of our own, if we consider monographs and text-books only; yet, if we compare our medical periodicals with those of foreign countries, we may challenge any nation to produce a more numerous or meritorious class of writers. These articles show what we might expect under favoring and favorable circumstances. We shall resume this subject hereafter.

We have, in former numbers of our Journal, repeatedly called the attention of our readers to the topical treatment of laryngitis by means of a solution of nitrate of silver, applied to the internal surfaces of the larynx; and we have assigned to Dr. Green the credit, to which, we believe, he is fairly entitled, of having been the first to introduce this mode of treatment (originally suggested by MM. Trousseau and Belloc) into this country.

The first chapter of Dr. G.'s Treatise consists of a full account of the "Anatomy of the Larynx, Trachea, and Bronchi," drawn from Meckel, Carpenter, and other standard writers. The second chapter treats of the "Physiology of the Mucous Follicles," which is followed by a chapter on the "Pathology of the Throat, Larynx, and Bronchi," in which we are presented with a very lucid description of the structural changes consequent on superficial inflammation of the mucous membrane of the throat, and on plastic inflammation of the lining membrane of the air passages, etc. Passing by these, we come next to "Follicular Inflammation of the Throat and Air Passages." On this affection, Dr. G. remarks:—

"The pathological conditions of the lining membranes of the air-passages, which now have been briefly examined, constitute the principal morbid alterations, to which pathologists hitherto have ascribed the known, primary disorders of the respiratory tubes.

"That there occur often in the tissues of these parts, other structural lesions which frequently are productive of important disease—lesions which, hitherto, have not been properly appreciated by pathologists, I shall now proceed to demonstrate.

"In the foregoing pages, I have examined, to some extent, the structure and physiology of the numerous glandulæ, or mucous follicles, which are found scattered along the whole extent of the lining membrane of the respiratory tubes. These glandular bodies are, themselves, the primary seat of important structural changes. That peculiar affection of the throat, which, under the appellations of 'Bronchitis,' 'Chronic Laryngitis,' 'Clergymen's Sore Throat,' etc., etc., has occurred, especially during the last ten or fifteen years, so frequently among public speakers and others, consists, primarily and essentially, as I shall be able, I think, to demonstrate, *in a diseased condition of the glandular follicles, of the mucous membrane of the throat, larynx, and trachea.*

"Commencing, generally, in the mucous follicles of the isthmus of the fauces, and of the upper portion of the pharyngeal membrane, the disease may be extended, until the glandulæ of the epiglottis, larynx, and trachea, and sometimes those of the œsophageal membrane, are extensively involved in the diseased action.

"The structural changes, to which the mucous follicles of the throat and air-passages are liable, are: *Inflammation*, which may result in *Ulceration*, *Hypertrophy*, *Induration*, or in a *Deposition of tuberculous matter in the follicles themselves;* attended, in most of these conditions, by a greatly increased and vitiated mucous secretion.

"The disease of the mucous glandulæ may be *primary* and *uncomplicated*, and be limited entirely to the fauces and pharyngo-laryngeal membrane; or, it may be *complicated* with *hypertrophy, and induration of the tonsils*, and with *elongation* of the *uvula*. It may accompany, or be consecutive to, other affections of the air-passages, and co-exist with *Laryngitis*, *Bronchitis*, or with *Pulmonary Phthisis*."

With respect to the history of this affection, Dr. G. states that it may have existed for an indefinite period of time, and yet have escaped the observation of medical writers, so far as not to have been considered a

distinct disease; the first case that came under his notice, was in 1832. We observed the complaint several years anterior to that, as stated in our Essay on the "Causes of Disease among the Clergy," and published in the Literary and Theological Review, for Sept., 1836.

"For some time after the appearance of the disease in this aggravated form, it seemed to be confined in its attacks to public speakers, and of these the clergy were the most frequent sufferers. Hence, the affection was called the 'Clergyman's Sore Throat.' It was soon found, however, that individuals of every profession, of all occupations, and of different ages and sexes, were liable to the disease. Of nearly four hundred cases, that have fallen under my observation, only about seventy-eight; or one in five, of this number, were, in any way, public speakers. When however, the affection does occur, in those persons who are in the habit of exercising the vocal organs, by public speaking, singing, teaching, &c., it is always, for obvious reasons, attended with symptoms of a more aggravated nature, than when it appears under ordinary circumstances."

The following Description of Follicular disease of the Air-passages is extremely accurate, and the best with which we are acquainted:—

"This peculiar malady consists essentially, in its formative stage, of an inflammation of the mucous glandulæ, which is sub-acute in its character; and which may result, as above stated, in hypertrophy, ulceration, or induration of these glandulæ, or in a deposition of tuberculous matter into the substance of the follicles themselves.

"In its simple and uncomplicated form, the affection commences, invariably, in the mucous follicles of the fauces and pharynx; and is extended thence, by continuity, to the glandulæ of the epiglottis, larynx, and trachea; and, in some instances, to those of the œsophageal membrane.

"So insidious, frequently, is the onset of this disease; and so gradual its progress, that, in some instances, it will be found to have continued many months; and to have made considerable advance, before the presence of any prominent, local symptom, shall have called the attention of the individual to the existence of the affection. He then, perhaps, becomes aware of an uneasy sensation, in the upper part of the throat, accompanied by a frequent inclination to swallow; as if some obstacle, in the passage, might be removed, by the act of deglutition; or, more frequently, there is an attempt made, and often repeated, to clear the throat, by a kind of screatus, or hawking; and to relieve it of a sensation of 'something sticking at the top of the windpipe.' About the same time, there is observed, an alteration in the quality, or *timbre* of the voice; there is experienced, in the vocal organs, a loss of power, and a hoarseness is present, which at first is hardly perceived, in the morning, or after a full meal; but, which is increased towards evening, and after speaking, or reading, longer or louder than usual. The mucous secretion, which, in a healthy condition of the glands, is bland and transparent, becomes viscid, opaque, and adherent; and is increased in quantity. Frequently, there is a slight soreness, felt about the region of the larynx, but seldom is any cough present, at this stage of the disease. In this condition, the symptoms may remain, for a long period; sometimes, for years; nearly disappearing, at times, and, then, again, being greatly aggravated, by vicissitudes of temperature, increased exercise of the vocal organs, and by various other morbific causes.

"If we inspect the throat and fauces, during the progress of the above symptoms, we shall find the epithelium, which in the healthy state of mucous tissue, covers its surface, more or less destroyed; its absence being manifested, by the slightly raw, or granulated appearances which the membrane presents; the mucous follicles will be found hypertro-

phied, and will appear distinctly visible; especially those studding the upper and posterior part of the pharyngeal membrane. (See plate I.) If the disease has been long-continued, a portion of the follicles may be found indurated, or, in some instances, filled with a yellowish substance, having a resemblance to, and presenting the physical characters of, tuberculous matter; whilst striæ of opaque, adhesive mucus or of a mucopurulent secretion, may be seen hanging from the veil of the palate, or coating the posterior wall of the pharynx. As the disease advances, and the follicles situated at the root of the epiglottis, and in front of the arytenoid cartilage; and the still more numerous glandulæ, of the laryngeal mucous membrane, become involved in the morbid action, all the above symptoms appear greatly aggravated; the hoarseness is much increased, and is constant; speaking, or reading aloud, is attended with great difficulty; and when continued for any period, is followed by pain, and increased soreness, in the region of the larynx; and by a sensation of extreme languor, not only about the vocal organs, but throughout the whole system. In some cases, where the disease affects the glands, situated in the ventricles of the larynx, and near the vocal chords, the voice becomes completely extinguished; or if, by great effort, the patient essays to speak aloud, the vocal resonance is uneven, harsh, and discordant.

"In such cases, notwithstanding the situation and extent of the disease, there is seldom present, any decided, or troublesome cough; and, in this respect, follicular disease differs, essentially, from all other equally grave laryngeal affections.—Cases have fallen under my observation, repeatedly, where the affection had advanced, until the symptoms present, indicated extensive disease of the follicles of the larynx, and of the membrane covering the vocal ligaments;—until the ulceration of these glands, situated at the root of the epiglottis, could be felt, upon the laryngeal surface, and yet the patient would remain free, or nearly free, from a cough, notwithstanding an abundant acrid secretion, poured out by the diseased follicles, would occasion an incessant hawking, to clear the upper part of the windpipe, and the pharynx, of this tenacious mucus."

The cases which are given in illustration of this affection, are very striking and numerous, but our limits preclude our quoting any of them—many of them are cases of clergymen, or lawyers of distinction; some of which had resisted every other mode of treatment, but were promptly relieved or cured by topical cauterization of the larynx. The follicular disease, described by Dr. G., often terminates in ulceration of the mucous glandulæ, which is also successfully treated in the same manner; employing, at the same time, some general remedies, as conium, corrosive sublimate, iodide of potassium, sarsaparilla, etc. This disease may assume a malignant form, or it may be complicated with Chronic Bronchitis, for causes of which we must refer to the work itself.

One of the most valuable chapters of the work, is that on the "Pathology of Follicular Disease of the Air-Passages." There are many original suggestions thrown out, relating to hypertrophy, induration, morbid secretion, and ulceration of the follicular glands, which display great accuracy and acuteness of observation, and entitle the author to much credit as a pathologist. We quote what is laid down relative to ulceration of these glands, as we have often verified the statements in our own practice.

"The observation has already been made, that, in all cases of long-continued chronic irritation of the mucous glandulæ, there exists a tendency, in the morbid action, to terminate ultimately in ulceration. Ulce-

ration is always preceded by some degree of inflammation; but irritation, and engorgement of the cryptæ, may continue for a long time, in many cases, before the occurrence of that process,—a solution of continuity with suppuration,—which constitutes true ulceration. In other cases, after the irritation has persisted for some time, the engorged follicle presents a small, ash-colored point; which is surrounded by an inflamed base, and has red, and slightly elevated edges. In follicular disease these ulcers, which ordinarily spread slowly, are, generally, first observed about the arches of the palate, and on the back of the pharynx; they next attack the laryngeal face of the epiglottis, and the epiglottic glands, situated at the base of this cartilage, and spreading by continuity; they in some instances invade the mucous follicles in the ventricles, and around the chordæ vocales. Indeed, there is no part of the larynx and trachea that may not be the seat of ulceration.

"In their early stages, ulcerations of the mucous glandulæ are small and superficial; continuing for a long time, not only are the glands destroyed, but the mucous, the sub-cellular tissues, and even the cartilages themselves, may become involved in the ulcerative process.

"Intimately connected with the pathology of this disease, are those morbid conditions of the mucous membrane which, sooner or later, occur, to some extent, in all forms of follicular disease. One of the earliest and most common alterations which take place in the mucous linings of the air-passages, in the early stage of follicular disease, is an increase in their thickness. Invited by the chronic irritation which has been set up in the diseased follicles, there is, at first, an additional quantity of blood received into the contiguous mucous and sub-mucous cellular tissues. This is followed by an infiltration of serum, within the substance of these tissues, by which interstitial deposition they are rendered swollen and pulpy.

"In the more chronic and long-continued form of inflammation, an interstitial infiltration of lymph sometimes takes place, which renders the mucous lining more dense, and constitutes the true hypertrophy of this membrane.

"In almost all cases of follicular disease, however, there occurs, eventually, an opposite condition of things from the above: for, after the affected glands have poured out their increased and vitiated secretion for a long time, not only the surrounding, engorged membranes are unloaded, and their increased thickness removed, but the sub-cellular tissues and the pharyngeal muscles become atrophied; in part, probably, from the increased absorption which has been set up; and we then have, on inspection, those enlarged or cavernous throats, so frequently observable in long-continued follicular disease, and to which allusion has more than once been made.

"Connected with, and following this morbid condition of the throat, is an interesting physiological fact, which it may be proper here to mention. After the removal of the disease by a successful plan of treatment, a deposition of healthy, structural matter commences, and the calibre of the enlarged throat is, in a short time, greatly reduced in its diameter. The filling up of the posterior pharynx, in these cases, usually commences, first, on the *right* side; so that, not unfrequently, the fleshy fibres of this side, will be, for a time, increased in thickness, to a considerable extent beyond those of the left. The muscles of both sides become, at length, fully and equally developed; until this takes place, however, perfect and natural vocalization will not be fully restored."

Dr. G. divides the *causes* of Follicular Disease of the Air-Passages, into the *remote*, or *predisposing*, and the *immediate*, or *exciting*; among the former, he ranks *hereditary tendency*, *climate*, *debility*, *sex*, and *age*. Under *debility*, produced by severe and protracted mental labor, conjoined with mental anxiety, so frequently a cause of this affection in

clergymen, as we first pointed out in our essay already referred to, Dr. G. may quaintly and truly observe :—

"Subjected, as such inevitably are, to constant mental anxiety, about temporalities; and obliged, at the same time, to labor, week after week, that they may prepare suitable *spiritual food* for their flocks, they become, themselves, so far as regards this life, like the 'vessels of wrath' against whom they declaim, '*fitted* for destruction'—the easy, and almost certain prey to disease!

"I speak not at random on this subject; for, there has come under my own observation, case after case, of individuals of this profession, who have broken down, under the combined influence of mental labor and mental inquietude.

"I am not the advocate of 'fat livings' for 'spiritual drones;' but the *laborer* is worthy of his hire; and that people, or that community, who employ a spiritual laborer, whose time, and talents, and life, are consecrated to their service; and yet, who withhold from him any part of that support which is necessary to place him above these temporal cares, rob him of his own, as truly, and, in the eye of heaven, as criminally, as the house-breaker who despoils him of his goods!"

The *exciting causes* of follicular disease are, according to our author, *influenza, eruptive fevers, exercise of the voice, tobacco.* We differ in opinion from Dr. G. in respect to the agency of dyspepsia in exciting follicular disease of the air-passages; so far as we have observed, it is a frequent exciting cause of the disease; and the same remark will apply to the exercise of the voice.

Dr. G.'s remarks on tobacco are entirely coincident with our own:

"With regard to the effects which are produced on the human system by the habitual use of tobacco, different opinions are held, and have been expressed.

"That a deleterious influence is exerted on the animal economy, by its use, most pathologists, of the present day, admit. Of this, after having watched for many years, in my practice, the effects of this narcotic, I entertain not a doubt; and I fully accord with the opinion expressed by Dr. Prout, who observes, in his work, 'On the Nature and Treatment of Stomach and Urinary Diseases,' that it [tobacco] disorders the assimilative functions in general, but, particularly, as he believes, the assimilation of the saccharine principle. 'I have never, indeed, been able, he adds, to trace the development of oxalic acid to the use of tobacco; but, that some analogous, and equally poisonous principle (probably of an acid nature), is generated in certain individuals, by its abuse, is evident, from their cachectic looks, and from the dark, and often greenish yellow tint of their blood.'

"In the 'Elements of Materia Medica,' Dr. Pereira, in speaking upon the physiological effects of the moderate use of tobacco, on the human system, remarks: that he is not acquainted with any well-ascertained ill effects resulting from the habitual practice of smoking tobacco.

"He admits, however, that he is not so competent to speak of its effects when otherwise employed, as in England 'the practice of *chewing* tobacco is principally confined to sailors;' and is, therefore, less frequently submitted to his observation.*

"As an exciting cause, the use of tobacco, in my experience, has proved a powerful agent in the production of follicular disease of the throat. Acting as a stimulant, directly, and constantly, upon the mucous follicles of the fauces and throat; and greatly increasing, as it does, the

* Op. supra citat., p. 318.

secretion of these glands, its employment, as we should conclude *à priori*, must have a direct tendency to develope the disease; especially, if a predisposition to the affection exists: hence it has occurred to me to notice, that of a great number of cases of throat-ail, which, during the last year or two, have come under my observation, a large proportion of them have taken place in individuals, who had been, or who were at the time, in the habitual use of tobacco.

"My attention has been called more particularly to this subject, from having noticed, several years ago, some observations on the use of tobacco in laryngeal and bronchial affections, by an eminent surgeon of this city. After having alluded to the almost universal use of tobacco in the countries of Northern Europe, he observes:—'In one very fatal and distressing form of disease, to wit, Laryngeal Phthisis, and Bronchitis, among public speakers, the fact is very clearly established, that the moderate habit of smoking, by the drain it accomplishes, and its anodyne qualities, has been eminently useful, at least as a preventive of that peculiar malady so frequent in the United States, especially among the clergy.'*

"From this opinion of my distinguished countryman and friend, I am compelled to differ, entirely, by the statistical facts, which I have obtained on this subject. Not only has the use of tobacco, in any and all its forms, proved, in my experience, an exciting cause of laryngeal disease; but where its employment has been persisted in, during the treatment of any case, I have found it impossible to restore such, to perfect health."

We pass over the chapter relating to the symptoms of this affection, as they are easily recognized. With respect to the *treatment*, Dr. G.'s remarks are eminently sound and practical; after pointing out the inefficiency of the means generally employed in the treatment of this disease, our author proceeds to speak of topical applications; and states that, after having tried many remedies, he became satisfied, that for safety, efficiency, and certainty of action, no known therapeutic agent can compare with *crystals of nitrate of silver*; the solid nitrate of the tubular form, *argenti nitras fusum*, is objectionable, from the fact, that it is more likely to contain *nitrate of potash*, or *copper*, or *lead*, in combination.

He remarks:—

"When pure, the crystals are transparent, white, or nearly colorless, and are completely soluble in distilled water. A solution of the strength of from two to four drachms of the salt, in an ounce of distilled water, when applied freely to the mucous membrane, does not act, as has been supposed, by burning, or by a destruction of textural matter: it forms, immediately, an union with the albumen, and other secretions of the mucous lining, and this compound, thus formed, defends the living tissue from the action of the caustic; whilst it operates to produce a most favorable change, in the vital actions of the part."†

With respect to the method of applying the solution, we quote our author's observations in full, p. 196.

"In the treatment of laryngeal disease, by the direct application of the nitrate of silver to the diseased surface, I have employed, ordinarily, a solution of this substance, of the strength of from two to four scruples of the nitrate, to an ounce of distilled water. When, however, there are found extensive ulcerations of the epiglottis, or about the opening of the

* Travels in Europe and the East. By Valentine Mott, M. D., pp. 83-4.
† The Elements of Mat. Medica, &c. By J. Pereira, M. D., Vol. I., p. 587.

larynx—ulcerations which it is desirable to arrest at once—I have not hesitated to apply directly, to the diseased parts, a solution of double the strength of the last named. But one or two applications, only, of a medicine of this power should be made, at one time; ordinarily, however extensive the lesions may be, it will not be necessary to employ a solution of greater strength than one composed of four scruples of the salt to an ounce of water. On the other hand, it has been found, that one of less strength than of from forty to fifty grains of the nitrate to an ounce of fluid, will have but little effect upon a diseased mucous surface, where ulcerations exist.

"In cases in which it becomes necessary to cauterize the interior of the laryngeal cavity, the aperture of the glottis should not be passed at once; the part should be *educated*, by applying the solution daily, for several days, to the faucial and pharyngeal region; to the epiglottis, and about the opening of the glottis.

"Proceeding in this manner, that exquisite sensibility which belongs to the lips of the glottis, is, in a good degree, overcome, and the instrument may then be passed into the larynx, without producing half the amount of that irritation which its introduction below the epiglottis would have awakened at first.

"The instrument which I have always employed for making direct medicinal applications into the cavity of the larynx, is one composed of whalebone, about ten inches in length (with, or without the handle, as represented in the plate), curved at one end, to which is securely attached a small, round piece of fine sponge.

"The extent to which the rod is to be bent, must be varied according to circumstances; for the opening of the glottis is situated much deeper in some throats, than in others; but the curve which I have found, suited to the greatest number of cases, is one which will form the arc of one quarter of a circle, whose diameter is four inches. (See plate vii., fig. 1.)

"The instrument being prepared, and the patient's mouth opened wide, and his tongue depressed, the sponge is dipped into the solution to be applied, and being carried over the top of the epiglottis, and on the laryngeal face of this cartilage, is suddenly pressed downwards and forwards, through the aperture of the glottis, into the laryngeal cavity.

"This operation is followed by a momentary spasm of the glottis, by which the fluid is discharged from the sponge, and is brought into immediate contact with the diseased surface.

"Every physician who has been present when this operation has been performed—and a large number have witnessed it, from time to time—has manifested much surprise on observing how little irritation has been produced by the introduction of the sponge.

"If the patient, on opening his mouth, take a full inspiration, and then be directed to breathe gently out, at the moment in which the sponge is introduced, the irritation, caused by the application, will be much less than when this caution is not observed. The fact, indeed, has been fully established, by repeated experiments, that the introduction into the larynx, of a sponge, saturated with a solution of the crystals of nitrate of silver, of the strength of forty, fifty, or even sixty grains of the salt, to the ounce of water, does not produce, ordinarily, as much disturbance as is caused by the accidental imbibition, into this cavity, of a few drops of tea, or even of pure water!

"In the topical treatment of the follicular disease, it will be found, that all larynges cannot be entered with the same facility. Indeed, in some instances, where œdema of the epiglottis, and of the arytenoid cartilages, has existed, I have found it very difficult, in making the first attempt, to pass the sponge of the probang through the aperture of the glottis."

Had we space we should be pleased to quote the writer's observa-

tions on excision of the uvula and the tonsils, and on the topical treatment of follicular disease when complicated with chronic laryngitis and tubercular phthisis. We cannot, however, pass over that portion of the work relating to the use of the caustic in acute laryngitis.

We would direct the special attention of the profession to this point. The case given by Dr. Green (see last vol. of the Journal, p. 235) is one in which, from the detail of the symptoms, no one would have expected any other than a fatal result. We have heard, moreover, of other cases, presenting all the appearances of true croup, where the same application has been followed by a like success. We are familiar with the beneficial effects of the nitrate of silver in arresting acute inflammations of the mucous membranes of the urethra, the fauces, and the eye, when properly applied; and its action in erysipelas is also well known. There seems, then, every reason to anticipate a similar good effect in laryngitis.

The general remedies employed in the treatment of follicular diseases are, nitrate of silver, iodine, mercury, prussic acid, sanguinaria, and muriate of ammonia. With respect to iodine, Dr. G. remarks:

"In the administration of iodine, in follicular disease, I have found, almost invariably, a specific effect produced upon the organs of secretion by the use of the medicine. For some time after commencing the remedy, an increased quantity of viscid mucus is thrown off, by the diseased glandulæ; and the patient often complains of a disagreeable taste, produced by the morbid secretions, from the faucial and pharyngeal membrane; and, in some instances, the irritation of the throat is, at first, increased by this salt. After a while the secreted fluid is diminished in quantity, becomes bland, and is of a healthier quality, while the lining membrane presents an improved condition. Equally salutary are the effects produced, ordinarily, on the secretions of the digestive organs, by the use of iodine.

"The iodide of potassium, I have generally considered as the best preparation for administration, in disease of the mucous follicles. Although the constitutional effects of iodine of potassium are very analogous to those of iodide, yet it may be given in larger doses, and for a longer period, without producing disorder of the system, than the free iodine. When indications of a scrofulous diathesis are present, in any case, it will be preferable, and will prove more efficacious, to exhibit the two preparations in combination."

As to the use of mercury, our author thus speaks:

"When there exists, in connection with follicular disease, a deranged condition of the digestive organs; or a diseased, or congestive state of the hepatic system; mercury, in some of its forms, will prove an invaluable remedy. In the treatment of tubercular affections, and in all forms of laryngeal disease, most writers consider calomel as the most efficient and useful medicine of all the preparations of mercury.

"In these cases of follicular disease, when the symptoms indicate the presence of a chronic thickening of the lining membrane of the laryngeal cavity, calomel, administered to the extent of affecting the mouth, as recommended by Dr. Porter, is, undoubtedly, under these circumstances, the most appropriate for exhibition; but where the general glandular system is involved in the morbid action—or even when some forms of pulmonic lesions co-exist with the follicular disease, I have found, in these complications, the bi-chloride of mercury, the most efficient, and altogether the best preparation of this mineral.

"In hepetization of the lungs, says Dr. Pereira,* the solid matter, deposited in the air-cells, is often absorbed, and the cells rendered permeable to air by the use of mercury.

"The bi-chloride of mercury may be given in doses from one twelfth to one sixth of a grain; and is best administered in the form of pills,† made with crumbs of bread, or combined with the extract of conium, or hyoscyamus; the best time for exhibiting which is after meals.

"In irritable subjects, opiates should be conjoined with it."

The muriate of ammonia, so much employed by the Germans, has proved, in Dr. G.'s hands, a valuable remedy. The following embrace the substance of Dr. G.'s experience as to its use in this affection.

"In combination with other remedies, I have frequently administered the muriate of ammonia, in follicular disease, when this affection has been complicated with sub-acute inflammation of the mucous membrane of the air-passages. In this form of the disease—namely, where the bronchial and pulmonic tissues are involved in the glandular affection, and when a troublesome cough is present, I have found the following combination prove valuable in allaying irritation, and in promoting expectoration:

"℞. Murias Ammon. ʒss.
"Scillæ pulv.
"Digitalis pulv. ää ℈j.
"Opii pulv. gr. x.

"Fiat massa, in pilulas triginti dividenda; quarum capiat unam ter in die."

The appendix of the work contains several letters from physicians, relative to the practicability and efficiency of making caustic topical applications to the internal surfaces of the larynx,—in relation to which a considerable degree of scepticism has formerly existed in the minds of some members of the profession,—but which, we doubt not, has by this time been dispelled. Dr. G. deserves, as we think, great praise for his perseverance under opposition, and many obstacles, in establishing the topical treatment of laryngeal disease on a firm basis. Although not the author of this mode of treatment, Dr. G. scarcely deserves less praise than if he were; for to him alone, we may say, are we indebted for first carrying it into extensive and successful operation, and pointing out the cases and circumstances under which it is likely to prove beneficial. In relation to the merits of the work which we are noticing, we can speak in terms of nearly unqualified commendation: it is certainly in advance, in many respects, of anything hitherto pub-

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* Elements of Mat. Med., Vol. i., p. 194.

† The following is the formula of Dzondi of Halle, who is a great advocate for the use of the bichloride of mercury:—R. Hydrarg. chlo. corrosiv. gr. xii. Solve in aq. distil. q. s.; adde Mica Panis Albi, Sacchari Albi ää q. s. ut fit pilulæ numero ccxl.

Of these pills—each of which contains the twentieth of a grain of the mercury—two may be given night and morning.

I have been accustomed to prescribe the following formula:—

R. Hydrarg. chlorid. corros. gr. iv.
Extract. conii ℈j.
Misce; et in pilulas quadraginta divide.

Should these pills—one of which may be given night and morning—irritate the mucous membrane of the stomach or bowels, one fourth, or one half of a grain of opium may be combined with each pill.

lished, concerning this important class of affections; and both as regards arrangement, literary execution, and soundness of pathological and therapeutical views, we believe it will take rank among the ablest treatises of the kind in our language.

We think it probable that Dr. G. will be considered by many as over-estimating the value of topical treatment in this disease, and as undervaluing general remedies; but we see no evidence of this in the present work; nor do we find that any extravagant or irrational expectations are held out as to what it may be expected to perform in pulmonary, tubercular, and other serious complications. Dr. G. has been wisely guarded on these points, preferring to wait for future experience to confirm or disprove the results of past observations. Our author, so far as we are acquainted with his views, does not hold the opinion that topical applications to the larynx will prove ultimately remedial in cases of pulmonary pthisis, but that they tend to allay laryngeal disease, and thus mitigate the sufferings and prolong the life of the patient. That such is their tendency, we can bear our testimony from the results we have witnessed, not only in our own practice, but in cases in which we have been in consultation with Dr. G. Some of these are recorded in the work under review.

There is one point of no great moment, perhaps, which would seem to require a word of explanation. Dr. G. remarks that it has been stated in some of the medical journals, by which, we understand, reference is made to our own, that, in applying topical remedies to the larynx, he has done so "after the manner of Trousseau and Belloc; but that so far from this being the case, he was in the habit of resorting to this treatment nearly two years before he had even heard of these authors; and that he derived the suggestion of making topical applications to the larynx, from the late Dr. James Johnson, Editor of the Med. Chir. Review." Dr. G., therefore, remarks, that so far as he is concerned, he is under no obligation to these authors, although he claims no credit for originating the practice himself.

Now, when we reflect that the work of MM. Trousseau and Belloc was published in Paris, in May, 1837, and that it was reviewed by Dr. Johnson, in his Journal for October, 1837 (p. 50, *Am. Ed.*, and for Jan., 1838, p. 393) we think there cannot remain a shadow of doubt that Dr. Johnson derived the "suggestion" which he made to Dr. G., in the summer of 1838, in relation to cauterizing the larynx, from the work in question, which he had recently perused for the purpose of analysis. It matters not, as it seems to us, whether Dr. G. derived the suggestion primarily, or second-handed, from MM. T. and B.; in either case, the credit of originating the practice, belongs to them. Moreover, on p. 195, Dr. Green remarks:—"To MM. Trousseau and Belloc belongs the honor of having been the first to prescribe and employ topical medications in chronic diseases of the larynx." We have no manner of doubt that Dr. G. practised this mode of topical treatment of the larynx, as he states, before he had heard of MM. T. and B.; but we also believe he never would have done so, had not these authors published their work prior to 1838, or the time when Dr. G. had his interview with Dr. Johnson.

In conclusion, we may remark that the work is got up in the best style of art; clear type, white paper, and beautifully executed colored plates, representing different forms of follicular disease and uvular enlarge-

ment, render it attractive to the eye, while its contents commend it to the notice of the practical physician. We hope it will receive, as it richly deserves, the patronage of the entire profession.

ART. XVII.—*Lectures on Natural and Difficult Parturition.* By EDWARD WILLIAM MURPHY, A. M., M. D., Professor of Midwifery, University College, London; Obstetric Physician, University College Hospital; and formerly Assistant Physician to the Dublin Lying-in-Hospital. New York, Saml. S. & William Wood. 8vo., pp. 281. 1846.

In the outset of professional life, especially in this country, it must very often be the case, that a medical man has no opportunity of putting to the test, those precepts in Midwifery which have been taught him in the lecture-room; and in consequence, by the time he begins to be called upon as an obstetrician, he has forgotten all but the most obvious truths. If he consults his books, he finds for the most part but meagre general directions, and as a little experience tells him that he can do pretty well in ordinary cases with the indefinite knowledge he already possesses, he is very apt to give no more attention to the matter. From this cause results a great deal of bad, because slovenly, obstetrical practice, as every one knows who is frequently called in consultation in such cases.

This is an evil which the book before us will, we think, do much towards remedying. It is a reprint of the lectures on Natural and Difficult Parturition, delivered in University College, London. It does not profess to embrace the whole subject of Midwifery, and therefore the author has been able to treat the subjects he has selected more in detail. We know of no work in which the process of natural labor is treated of in a more satisfactory manner. All the little details of practice, an observance of which shows the difference between the accomplished accoucheur and the blundering ignoramus, are dwelt upon with minute particularity. Dr. Murphy belongs to a school of obstetricians which we believe to be the best in the world, that of Dublin, where the policy of "non-interference" is maintained and practised, to an extent which would surprise some of our tyros who have been brought up in the more "meddlesome" practices of the French authors, or even in those of our own justly distinguished Dewees.

The first two lectures are occupied with the anatomy of the pelvis, and the measurements and deformities of this part of the bony system. The author dwells more than is usual upon the measurements of the *cavity*, and, we think, to good purpose. The mechanism of parturition occupies the next two lectures, including a clear view of the different positions of the head, and the mode of distinguishing between them. This is a thing that few practitioners pay sufficient attention to, being satisfied with ascertaining that the head is coming down.

The proper management of Natural and Difficult labors, and an account of the different obstetrical instruments, with directions for their use, comprise the remainder of the volume, excepting that at the close the author has arranged in the form of aphorisms (some of them taken from Denman) the practical portions of his work.

The directions given by Dr. M. for the management of natural labors are eminently sound and judicious. We could have wished, however, that instead of cautioning his hearers against pulling *too much* at the funis, he had insisted upon their not doing so at all. We know of no case in which it is necessary or desirable to do this, and if the principle were once established that it was never to be done, we have no doubt that a good many hæmorrhages and other accidents incident to leaving portions of the membranes in the uterus, &c., would be avoided.

Of the mode of application of the forceps, vectis, and perforator, and of the cases in which they are required, the author speaks at length. He considers the vectis as most useful in cases where the head is delayed at the outlet, in consequence of want of power in the uterus to overcome the resistance of the perineum, and gives full directions for its use, deeming it less dangerous to the perineum than the forceps. It may be so in skilful hands, but we are inclined to think it would be better if the vectis were altogether discarded as an instrument of *extraction*. Its use in changing the position of the head in some cases is undeniable.

Speaking of the use of the forceps, Dr. M. says, "When the forceps is applied, it is well to dislodge the head from its situation in the first instance, because it constantly happens in these cases of arrest some accidental displacement of the head is the cause of difficulty, which the uterus cannot alter; but when the head is relieved, it will glide into the correct position, and may be delivered without difficulty."

He advocates a more frequent use of the perforator than has generally been thought necessary, both when the child is known to be dead, and when, though living, its birth alive would be of very doubtful possibility, and of great danger to the mother. There can be no doubt that in many cases where the delivery *might* be effected with the forceps, this proceeding would be attended with so much risk to the mother, and afford so little prospect of saving the child's life, as to justify, if not require the operation of perforation. Our limits forbid our discussing this question at length, and we must therefore refer to the book where the reasons *pro* and *con* are very fairly and clearly stated.

We hope that at some future time Dr. Murphy will favor the profession with the substance of his teaching upon the other topics in Midwifery which are not treated of in the present work, regarding this as among the most valuable books yet published on the subject.

S. C. F.

ART. XVIII.—*Tenth Annual Report of the Trustees and Superintendent of the Vermont Asylum for the Insane.* Sept., 1846. 8vo., pp. 8.

WE learn from this Report, that the buildings of the Vermont Asylum now afford accommodations for 300 patients; as large a number, say the Trustees, and in which opinion we fully agree, as can be properly taken care of in one Asylum.

"During the last three months," says the Report, "the number of patients has varied from two hundred and n inety to three hundred. At no time has there been more than three hundred in the Asylum. At the present time there are two hundred and ninety-one. As the buildings are so nearly full, all persons out of the State and wishing to place their friends

in the Asylum, are requested to make previous application to the Superintendent or one of the Trustees.

"The Institution has been very successful in its operations the past year. A greater number have enjoyed its benefits, and a greater number have recovered, than during any previous year. The whole number has been four hundred and sixty. One hundred and ninety-seven have been admitted; one hundred and sixty-nine have been discharged;—leaving two hundred and ninety-one in the Institution. Of those discharged, ninety-five have recovered.

"With the increase of the appropriation for the insane poor, there has been an increase of beneficiaries. One hundred and eighty-eight have been assisted by the State the past year. Of these, seventy have been admitted, and sixty-five discharged; leaving one hundred and twenty-three beneficiaries in the Asylum. Of those discharged, forty-one have recovered, fourteen have not recovered, and ten have died. Of those who died, several were brought with fatal diseases upon them; requiring so much attention as to make it expensive keeping them properly at home."

Notwithstanding the extreme cheapness of board at this Institution,* we perceive that the income for the last year has exceeded the expenditure, by nearly $600. On this subject, the Superintendent, Dr. Rockwell, remarks:

"We rejoice in the experiment of lessening the expenses by increasing the number of patients. We find by experience that much greater facilities for comfort and restoration can be afforded with our present number, than when the expenses were nearly twice the present terms, with a small number of patients. The Legislature, by furnishing the means for erecting our buildings, have conferred a great benefit on the people of this State, who live very independently and comfortably while their families are in health, but are obliged to make great sacrifices when one of their number becomes insane. In such cases, they immediately look to the Asylum as the best situation for the comfort and restoration of their friends, and at much less expense than would be required to support them at home."

The Report, though concise, is judicious; and ample, we think, for the purposes required.

"The same treatment," says Dr. R., "which has been detailed in our former reports is still continued. The attendants and nurses are procured from respectable families, and none are retained except those who are kind, intelligent, faithful, and honest. We live in a section of the country particularly favorable for procuring such assistants, and it is not too much to say that the attendants of this Institution are not inferior to those of any other Asylum in this or any country.

"Our usual modes of employment and amusement are still continued. An excellent farm is connected with the Institution, on which many of our patients are more or less employed. There is also a flower and culinary garden, which afford much agreeable employment in their cultivation. In the carpenter's and shoe-maker's shop there is much labor performed. The employment to which the patients were accustomed before their insanity, is generally the most agreeable to them, and profitable to the Institution. The consciousness of having been in some way useful to the Institution is very gratifying to many of them.

"We have a healthy climate, and an abundance of pure water. Of the latter, a large quantity is constantly running through the Asylum, and it is accessible at all times in every hall of the building. Its importance to the health and comfort of the inmates is obvious to every one.

* The terms are $2 per week for the first six months, and $1,50 per week afterwards. When the insanity is connected with epilepsy or paralysis, the terms are $2,50 per week. No charge for damages in any case.

"Whenever there can be detected any physical disease in any part of the human system, it is treated as in other states of the mind. After all, we depend much on the faithfulness of kind and intelligent nurses, wholesome and nourishing diet, neat and well ventilated apartments, the different kinds of bathing, plenty of exercise in the open air, either by riding, walking, or cultivating the garden and farm, and all such agreeable employment of the mind and body, as shall promote health, and call into exercise those faculties of the mind that are unemployed.

"Reading and writing we consider valuable auxiliaries for the comfort and restoration of the insane. The patients are furnished with stationery, and are encouraged to write on all subjects except that of their insanity. The practice of writing improves the power of fixing the attention, and tends to restore the lost balance by directing the mind from its delusions, and calling into exercise those faculties which would otherwise lie dormant. Even when they write on the subject of their delusions they disclose the nature of their insanity more clearly than could be learned in any other way.

"A large number of the patients are fond of reading, and beguile many a weary hour in this manner. The library, now increased to eight hundred volumes, is at their disposal. Like all public libraries, we observe the same regulations relative to the taking out and returning of the BOOKS. It is very seldom that the books sustain any injury at their hands.

"The Asylum Journal continues to furnish much employment by writing and selecting for its columns. It also furnishes a large amount of reading matter, by means of the newspapers which are received in return. We are under renewed obligations to the publishers who have so generously exchanged with us."

We have only space for the following caution, which cannot be too often repeated.

"We would also advise the friends of the patients against their too early removal. During the past year six patients have recovered who have been with us more than two years, and two of them more than three years. Had they been removed after a residence of three, six or even twelve months, it is probable that neither of them would ever have recovered.

"These remarks hold good more particularly in regard to chronic cases. There are few chronic diseases which yield readily to treatment, but most cases require a long, skilful, and judicious application of proper remedies before a recovery can be expected. This is particularly the case in the disease of so delicate an organ as the brain, and requires the most skilful appliances, both medical and moral, for its restoration. After physical diseases, the patient does not attempt any bodily labor, until he has regained in a good degree his former strength and ability. Such is the delicacy of the organization of the brain, and its susceptibility to receive impressions, that greater care is necessary that it should not be unduly excited during convalescence, than any other organ of the human system. It is safer, therefore, that the patient remain until his convalescence is sufficiently confirmed, before he returns to the exciting scenes of human life."

ART. XIX.—*The Writings of Hippocrates and Galen, Epitomized from the Original Latin Translations.* By JOHN REDMAN COXE, M.D., &c. Philadelphia. Lindsay & Blackiston. 8VO., pp. 681. 1846.

WE have here a goodly sized volume, filled with the maxims of two of the early fathers of medicine, whose precepts carried with them for cen-

turies the weight of oracles. We agree with our learned and accomplished author, that it is not creditable to the profession, either of Great Britain or America, that a full translation of both these writers has not yet been given to the English reader, and that so few copies are to be found, even in the original Greek or Latin translations. We hope that the Sydenham Society, if indeed it still exists, will be tempted to give us an English translation of, at least, the more important works of Hippocrates, and in due time, of those of Galen also. In the meantime, we commend the present abstract of our erudite countryman, as in a high degree worthy the countenance and support of the profession.

ART. XX.—*A Practical Treatise on the Diseases of Children.* By JAMES M. COLEY, M. D., etc. Phila., Barrington & Haswell, 8vo., pp. 412.

A FEW years since, our fellow townsman, Dr. James Stewart, wrote and published a work on the Diseases of Children; which was pronounced by Dr. James Johnson, Editor of the Med. Chir. Rev., as the ablest work on the subject ever written in the English language. Subsequently, Dr. Condie, of Philadelphia, published a work on the same subject and on a similar plan, in which no mention whatever was made of Dr. Stewart's work; and now, we have another treatise, which occupies the same ground, but no reference whatever in it, to the publication above mentioned. We shall not attempt to explain how this has happened, for we do not know; we, however, should be surprised to find the work of Dr. S. was wholly unknown to these gentlemen. But it may be said, all this has nothing whatever to do with the merits of the work under consideration.

The Treatise of Dr. Coley claims to be more comprehensive than any of the kind extant, but, we think, without any just foundation. The Author is mistaken in saying that there is no work which treats of all the diseases incident to children, and their appropriate surgical as well as medical treatment; for several of them, particularly Stewart's, Condie's, and Eberle's, do so, not to name some of foreign origin. As a general rule, we think, Dr. Coley prescribes too much medicine and in too large doses, and is too fond of blood-letting, in treating the diseases of children: we have been led to adopt a milder course with equal, and often greater benefit. Dr. C. speaks of employing gargles in cases of mercurial salivation in young children; we have been so fortunate as not to meet with this accident in children, and we have been so unfortunate as to be unable to teach such little patients how to gargle in cases where it might have proved useful. We protest, moreover, against the practice of giving children calomel on every occasion, as if this were a sovereign and universal specific.

But notwithstanding some blemishes, we are, on the whole, pleased with Dr. C.'s work; it embraces the results of a long life devoted to the practice of medicine, and displays a considerable amount of research and observation. Still, it is inferior, in our judgment, to some of the treatises on the same subject, to which we have already referred.

ART. XXI.—*A Conspectus of the Pharmacopœias of the London, Edinburgh, and Dublin College of Physicians, and of the United States Pharmacopœia: Being a Practical Compendium of Materia Medica and Pharmacy.* By A. T. THOMPSON, M.D., F. S. L. 4th American Edition. Edited by CHARLES A. LEE, M.D. etc. New York: Samuel S. & William Wood, 261 Pearl st. pp. 313.

THE Conspectus of Dr. Thompson is too well known to need recommendation at this day. The rapid sale of three large American editions shows the estimation in which it is held by the profession, and the demand for it is constantly on the increase. It is a complete Cyclopedia of Materia Medica, Pharmacy, and Toxicology,—a digest of all the Dispensatories of Great Britain and America, brought down to the present moment. Fortunate may that physician deem himself to be, who, unable to carry everything in his head, can carry it all, and a little more, in his pocket.

ART. XXII.—*Dr. Hooper's Physician's Vade-Mecum: or a Manual of the Principles and Practice of Physic. Considerably enlarged and improved, with an outline of General Pathology and Therapeutics.* By WILLIAM AUGUSTUS GUY, M.B., and with Additions by JAMES STEWART, A.M., M.D., &c. New York. Harper & Brothers. pp. 541. 1846.

THIS book claims to be a manual on the principles and practice of physic, when in fact by the additions of the English and American editors, it contains as much if not more than many of our voluminous treatises. As a work of reference for the student and practitioner, it is admirably adapted to the end designed. It contains in a condensed form all the more important practical facts of the larger works, and the more recent monographs on the different subjects of Pathology and Therapeutics. Completely divested of theory as the work is, we would most heartily recommend it to the attention of the profession, believing as we do that the work before us is one among the few whose claims the author and editors have increased by the complete fulfilment of their promise.

ART. XXIII.—*Jarvis's Lectures on Fractures and Dislocations, together with Concise Instructions in the use of the Adjuster.*

MANY of the readers of the New York Journal of Medicine are already acquainted with the merits of Dr. Jarvis' apparatus for reducing fractures and dislocations, from frequent editorial notices, as well as a full description of it, and the principles which are to regulate its use, furnished for our pages by the ingenious inventor himself. (See Vol. I., p. 140; Vol. II., p. 133; Vol. IV., V., etc.) Recently Dr. Jarvis has exhibited his instrument to the first surgeons of Europe, and received the highest testimonials as to its merits. Among those who have furnished such testimonials we observe the names of Sir Benjamin Brodie, S. Cooper, R. Quaine, W. Ferguson, R. Keate, Thomas Hodgkin, E.

Stanley, etc. These names, associated with those of Mott, Parker, Mutter, etc., in our own country, must satisfy the profession of the high value of the invention. During the last year Dr. Jarvis has delivered, by invitation, a course of five lectures on Fractures and Dislocations, in the Royal Westminster Ophthalmic Hospital of London, explaining the new modes of treatment, founded on anatomy and physiology and the laws of mechanics, which will compare, as respects originality of views, soundness of physiological, pathological and mechanical principles, with the very best surgical writings extant. The inventor claims, and justly as we believe, that by means of this instrument the surgeon has at his command an extending and counter-extending force, equal to that of twelve men, all or any part of which he can apply to any limb at pleasure, and yet the limb remain perfectly moveable and free from manipulation. For a more particular description we refer to former volumes of our Journal. The instrument is manufactured by Messrs. H. & G. Kellogg, of Derby, Conn., to whom applications are to be made.

ART. XXIV.—*The Trees of America, Native and Foreign; Pictorially and Botanically delineated, and scientifically and popularly described; being considered principally with reference to their Geography and History, Soil and Situation; Propagation and Culture; Accidents and Diseases; Properties and Uses; Economy in the Arts; Introduction into Commerce; and their Application in useful and ornamental plantations: Illustrated by numerous Engravings:* By D. J. BROWNE, author of the Sylva Americana. New York: HARPER & BROTHERS. 1846. 4to. pp. 520.

THIS beautiful work on the Forest Trees of America, is the most complete and extensive in its character of any hitherto published on this interesting subject. In preparing materials for it, the author has traversed various parts of North and South America, Africa, Europe, the West Indies, etc., where he availed himself of the advantage of not only verifying and correcting the observations which have been made by others on the trees of those countries, but examined them under various conditions, in a state of nature, as well as in nurseries and collections of the curious. The result is a work of rare interest, displaying great research, and an intimate acquaintance with the entire field of Arborology.

This work is one which has especial claims on the patronage of medical men, scattered as they are over every part of the country, and devoted more or less to agricultural, horticultural and botanical pursuits, on all which branches the work is replete with useful information. The pictorial illustrations, we are informed, have been made directly from drawings after nature, or from accurate delineations already in existence, one figure representing the general appearance of each tree, and another of the leaf, flower, fruit, &c., in order that the descriptions may be better and more clearly understood, and to render their identity more striking. Our limits in the present number preclude a more detailed notice, which we had intended: we shall hereafter give a more particular account of the work, especially as relates to the medicinal properties and uses of the different trees and shrubs described.

PART THIRD.

American Intelligence and Editorial.

Medical Education and Reform.—We surely need but refer our readers to the judicious and able lecture of Dr. Watson in the present number of our Journal. It is not only replete with valuable information and good sense, but is written in a spirit of candor, which must commend it to the approbation of every ingenuous mind. We cannot but augur the most favorable results, when we find the leading members of the profession actuated by such just and liberal sentiments; and we trust the time is not distant, when the cultivators of medicine will no more be denounced for holding opinions not universally received, or which may apparently clash with the private interest of a few. With a spirit of toleration and internal harmony, the medical profession of this country have a brilliant path of prosperity opened before them; the only danger is, that sectional, college, or state jealousies may spring up which may tend to prevent that union, so desirable in accomplishing the great reforms, demanded by the spirit and progress of the age.

But when we consider the unexampled and, we may add, unexpected harmony, which characterized the proceedings of the late National Medical Convention which met in this city, and the entire unanimity with which all our colleges, state, county and other local Medical Societies, are appointing delegates to the next Convention which is to assemble in Philadelphia on the second Wednesday of May next, we feel fully warranted in the belief, that the most auspicious consequences are to result from the present agitation and movements in the profession; and that the time is not distant, when the question will no longer be mooted, whether the medical men of America are really inferior in scientific, literary and professional acquirements to those of Great Britain or the Continent.

We rejoice to be permitted to take any part, however humble, in urging forward these movements, believing that nothing is more to be dreaded than stagnation and inertia; and whatever may be the sacrifices which we may personally be called upon to make, we shall give our cordial support to all measures calculated to enhance the usefulness and respectability of the profession, by raising the standard of medical education, and especially by urging the adoption of such preliminary training and acquirements, as may furnish a reasonable security for the usefulness and success of those who enter upon medical study. With these remarks, we commend to our readers the following communication from our respected and able correspondent, Dr. N. S. Davis, without, however, intending to endorse all his views and opinions:—

Mr. Editor:—

In the September number of your excellent Medical Journal was an article from the pen of C. B. Coventry, M.D., commenting on certain resolutions adopted by the N. Y. State Medical Society, at its last annual session; in the course of which allusion is so frequently made to myself, that I trust your readers will pardon me for saying a few words in reply. Perfect fairness and a rigid adherence to truth constitute the beauty of all controversies. Setting up a man of straw to show our bravery in

knocking him down or attributing to others sentiments which they have never uttered, are marks neither of candor nor ability.

Prof. Coventry commences the article to which I have alluded as follows, viz: "On looking over the 'Transactions of the Medical Society of the State of New York,' for 1846, I was surprised to find that certain Resolutions which were appended to a report made to the Society the previous years by N. S. Davis, as chairman of a committee, were adopted by the society, and a committee appointed to submit them to the county societies for their approbation. The two important resolutions and the only ones which I shall notice, are the following:" Here follow the resolutions quoted from page 189 of Appendix to the "Transactions" for 1846; and which the foregoing quotation represents as having been appended to a report of mine. Now it so happens that neither of the resolutions referred to was either written, presented, sustained, or voted for by me. And what is still more surprising, on the very same page from which Prof. Coventry quotes the resolutions, my vote stands recorded *against* the very first clause of the first resolution. And yet he not only represents them as mine, but throughout the whole article, looks to a report made by me one year previous for the reasons of their adoption. Would it not be well for the Professor in "looking over the Transactions" again, to *look* with a little more *care?* The truth is, that the resolutions alluded to were adopted as substitutes for those presented by myself one year previous; and I disown them now, not from want of respect for the Society by which they were adopted, but to show that Prof. Coventry, like some others, has exercised the right of commenting with great freedom on the opinions of others, without taking the trouble to learn what those opinions were.

Again, I am represented as referring all, or nearly all, the evils under which the profession labors, to the want of proper action on the part of the Medical Colleges; and with being personally hostile to such institutions; or if not *hostile*, Prof. Coventry exclaims: "Save us from such friends." Now two short quotations from the same report to which the learned Professor so often alludes, will fully answer both these charges. Thus I say in the report: "With this question, and this alone, resting on the mind of the student, together with the adoption of the standard of medical education recommended in this report, we have no fears that our *own* medical institutions will be abandoned for those of any other state or nation. On the contrary it would *compel many* to enter those institutions who are now licensed by County Societies without ever seeing a subject dissected or knowing enough of chemistry to tell the composition of Epsom salts." And in another place: "Perhaps there is no *greater error* in our present system, than in the relation between the preceptor and his pupil. The former, instead of having the latter always with him, on all proper occasions, to witness disease in all its forms, to impart practical instruction, to infuse into his mind, his own thoughts, feelings, and lofty aspirations; and to guide him in tracing with the dissecting knife in his own office, not only every part of man, but the whole animal kingdom; thus acquiring the habit of patient, persevering investigation, without which excellence can never be attained in medicine; he barely answers the purpose of a scanty and often ill-selected library, leaving the student to grope his way over the alluring fields of medical science, with only the transient light of the medical college to illuminate his path. *We* by no means *undervalue* the *importance* of medical instruction in *colleges.* But we hold most firmly to the position, that the surest way to fill our colleges with intelligent students, is to show them clearly the importance of thorough scientific investigation, by practically initiating them into every branch or corner as it were, of the whole field of medical science." Is here any "crusade against our institutions?" any hostility to medical colleges? It is true, that in the report alluded to, I represent the examination of students, both by the Boards of County Censors and the Pro-

fessors in Medical Colleges as imperfect and insufficient; and that such Professors are liable to be influenced by the same motives and considerations as other men. I also intimated that sixteen weeks is far too short a period for the student to travel profitably over the whole field of medical science. And has Prof. Coventry, or any one else, shown these representations to be false? The simple truth is, that so far from being an enemy to medical colleges, I have uniformly, in all I have said and written on the subject, aimed at the adoption of such a standard of attainments as would necessarily compel every student to spend more or less time in these institutions. If I have erred in judgment on this point, it is the part of candor to show that *error*, instead of picking a sentence here, and another there, detached from their natural connection, apparently for the purpose of holding me up as the reviler of my profession and an enemy to its institutions. But we are told in the article under review that "a wise physician does not prescribe for his patient on vague rumors, but first ascertains whether his patient is sick, and the nature and character of the disease," and straightway complains of me for not having discharged the duty of *Curator* in attending the public examinations, at the annual commencement in Geneva College, and thereby informing myself of the real character and qualifications of the Alumni of that institution. Certainly no one would take more pleasure than myself in discharging this duty; but not having enjoyed fifteen or twenty years of lucrative practice, and professional status in two or three medical colleges, I have hitherto found it very inconvenient to sustain the expense of travelling a hundred miles, and one or two weeks' absence from home, for the purpose of *listening* to one day's examination of a class of students who have previously been separately examined by the same questioners, and voting yes, or no, on their qualifications. Besides, I had ever supposed it to be the duty of "a wise physician" to make a direct personal examination of his patient, instead of relying on the questioning of his nurse; so much for personal considerations.

Let us now turn to the doctrines or sentiments contained in the article under consideration. And first, as to the *necessity* of Reform. We are told by Prof. Coventry that the present medical organization of this State has been in existence forty years; and that through all that period, the profession has enjoyed a high degree of prosperity. Hence he unites with the venerable and ever to be remembered Dr. John Stearns of New York, in cautioning the profession against innovations of any kind. Now so far from there being soundness or force in this reasoning, the very positions assumed prove the necessity of reform. For if the main features of the present system were adapted to the condition of the profession forty years ago, and it be true that a high degree of prosperity has been enjoyed from that day to this, such prosperity necessarily implies a change of condition; and such change of condition requires corresponding changes in the system. Let us look at the facts. We are told, in the language of Dr. Stearns, that previous to the adoption of the present organization he "found the profession in the country towns, with few honorable exceptions, *destitute* of medical science, and so discourteous in their professional intercourse and consultations as to *merit* the *contempt* of the respectable portion of the community." (I wonder if there was in those days no one to "stand up *alone*, in the broad expanse of America," and *defend* the profession against so *slanderous* an imputation.) There was scarcely a well organized medical college in the State, and only very few in the nation. The facilities for general education were limited and meagre compared with those of the present day. And whoever chose entered on the practice of medicine without either examination or special legal authority. In such a state of things, no one will deny to Dr. Stearns the highest degree of human wisdom, in adjusting the organization of 1806 to the then existing wants of the profession. The formation of State and County Societies immediately brought order out of confusion; systems of medi-

cal ethics were adopted to regulate professional intercourse; and the colleges being few in number, and comparatively little patronized, a very large portion of the candidates for admission into the profession were examined and licensed by the County Censors, and the fees derived therefrom appropriated to the purchase of County libraries; a new and universal spirit of inquiry was aroused, and as time passed on the study of practical anatomy, physiology and chemistry, became better appreciated, and in the same ratio the colleges were more frequently attended. And what has been the result? We have now more medical colleges in this State than existed in 1806, in the whole Union; and more students annually receive from them the highest honors of our profession. In the same proportion the number licensed by County Societies diminished, until, according to the best data we have, they now license on an average of less than *one* student apiece once in *two* years; and consequently no funds of any importance are derived from this source. In the meantime, some of the Societies have failed to meet so long, that they are practically dead; while others still meet once or twice a year and go through with the form of electing officers, among whom is generally a delegate to the State Society; and a very few do a *little* more than this. Now I appeal to every observing member of the profession, to say if this brief sketch of its progress under the present organization, is not correct.

Indeed, if we look into the published Transactions of the Medical Society of this State for the last year, we shall find only *eleven* students licensed by the whole eighteen Societies there reported, and the year previous only *eight* by *seventeen* Societies; and among these were included the most active and efficient Societies in the State. If these things *are* so, what becomes of Dr. Coventry's main position, that because we have prospered under the present system forty years, therefore, reform is unnecessary; or of Dr. Stearns' prediction, that the doing away with County Censors, would be cutting the main "ligament" that binds the whole organization together, and sending it again into chaos? Verily, the licensing of *one* student apiece once in *two* or *three* years, by our County Societies, constitutes a very *frail ligament* on which to rely for the support and efficient action of the whole medical organization of the Empire State. To *cut* such a ligament would be entirely useless; for it is already *atrophied* and powerless. So much so, indeed, that a majority of the Societies represented in the State Society during the last two or three years have voluntarily offered its entire surrender. And whoever looks at our neglected County libraries: the comparatively small number attending the regular meetings of the County Societies; the total failure of some of them; and the grave discussion now going on in others, whether it is not best to make a formal surrender of their charter? will be satisfied that their universal dissolution is near at hand, unless some *reform* is adopted by which they are re-animated with new vigor and efficiency. But let us turn from our internal organization, to a momentary glance at our medical colleges. I have already shown that while the adoption of our present organization brought order out of chaos, refined the intercourse among medical men, established County libraries, excited a spirit of inquiry, and a better appreciation of the study of anatomy, physiology, &c., it has gradually and almost completely transferred the whole business of teaching and licensing students into the medical colleges. Hence arises the question, whether these institutions have actually increased their facilities for communicating knowledge in proportion to the increase of their patronage? That they have increased in *numbers* sufficiently rapid, no one will deny; and that they have also improved their libraries, their museums, and their means of illustration and demonstration, there can be no doubt. But have they, at the same time, done the more important work of *extending* the *period* of their instruction, of enlarging the scope and increasing the fullness of their several courses, and exciting higher and wider and more perfect attainments on the part of their Alumni?

A strict regard for truth will compel a negative answer to this question. For it is well known that *four months* constitute the full period of instruction in nearly, if not quite, all our colleges. And during this brief space of time, six professors urge on the minds of the students as many different branches of medical science, making a field so extensive that to read a single standard text-book on each, in the same space of time, would require the reading of more than forty pages per day. Will any one contend that the human mind can properly digest and treasure up knowledge thus rapidly urged upon it? Certainly not. I might here adduce the statements of the most eminent and experienced professors in this, and almost every other State in the Union, in confirmation of my position on this point, but a simple statement is sufficient to carry conviction to every unprejudiced mind. Again, I must still contend that the conferring on medical colleges, full and unlimited power to admit their own students into the ranks of the profession, is wrong in principle and *liable* to abuse in practice. I know that Prof. Coventry says in reference to this point, "that the practice has been almost universal throughout Christendom for literary institutions to confer their honors on their own students." And that "it was left for the *chairman* of the committee to make the *discovery* that it is wrong in principle," &c. The learned professor must presume very largely on either the ignorance or credulity of his readers, if he expects them to detect no difference between the conferring of mere literary honors, or evidences of attainment, and the granting of degrees that in themselves confer not only important special privileges, but fully admit their possessors to the ranks of an ancient and honorable profession. On the contrary, I think it will be left for *him* to *discover* the first literary institution, either in Christendom or out of it, that ever enjoyed or exercised any such right. I certainly know of none in this country, and I think it will be found that the medical colleges stand alone in this respect throughout the world. From what I have already said, it will be seen that such a reform as will accomplish the following objects is not only desirable, but necessary for the welfare and permanent prosperity of the profession in this country, viz:—

First. The *re-invigoration* of State and County Societies, or in other words, the accomplishment of a more active and efficient internal organization in each State; by which knowledge shall be diffused, medical ethics sustained, and a spirit of active inquiry kept alive throughout the profession.

Second. The adaptation of a judicious standard of *preliminary* education for the young man before he enters on the study of medicine.

Third. The elevation or extension of the medical requirements for admission into the ranks of the profession, and the adoption of a more perfect and efficient system of final examinations.

Fourth. The extension of the period of instruction in all our colleges, and an unconditional requirement that every student shall attend one or *more* full courses in some regularly organized college.

Fifth. The adoption of some measures for greatly elevating and improving the business of private teaching in medicine.

It is thus apparent to all, that the questions presenting themselves are not necessarily those of either favor or hostility to medical colleges or other institutions; but that they are all summed up in this: How shall we retain all the benefits derived from present and former organizations, and still advance onward to a higher standard of honor, excellence and usefulness?

My own views in regard to the particular measures to be adopted in reference to all the topics named, will be given more in detail hereafter.

N. S. DAVIS, M.D.

Binghamton, Dec. 7, 1846.

CORRECTION.—We cheerfully comply with the request of Prof. Dickson, to insert the following letter referring to a statement made by one of our correspondents in our last September No. It is our earnest desire to do justice to all; but when we fail to do so, we trust those who may feel aggrieved will not hesitate to say so.—*Ed. N. Y. Jour.*

CHARLES A. LEE, M.D., NEW YORK,
Editor of the N. Y. Journal of Medicine, &c.

DEAR SIR:—

My name is introduced somewhat gratuitously on the 226th page of your September Number, in the following paragraph: "It is but *justice* to say, Dr. Stokel [Dr. Strobel is meant] wrote a book to prove *it* (*Y. F.*) was introduced here, which seemed to materially alter the views of Professor Dickson who was previously the advocate of Non-contagion," &c.

This is not *justice* to me by any means: how unjust will appear from the fact that Dr. Strobel's book contains a letter from me in reply to a request, on his part, that I would furnish him with an "expression of the opinions" that he knew I entertained on the subject; these opinions being unequivocally in favor of the communicability or transmissibility of Yellow Fever. Dr. Strobel's book, of course, was not then published, nor had I seen a single line of the MS. I was aware of Dr. Strobel's views, and mine had been made public, both through the press and in the lecture room, some time previous.

I remain, Sir, very respectfully your obdt. servt.,
SAMUEL HENRY DICKSON.

Charleston, S. C., Nov. 3, 1846.

Owing to limited space, and the length of the letter referred to by Prof. Dickson above, which is to be found on page 126 of Dr. Strobel's work on Yellow Fever, we are under the necessity of giving an extract. The letter is addressed to B. B. Strobel, M.D., and bears date Jan. 14, 1840; in it, Prof. Dickson says: "I believe Yellow Fever to be transmissible or communicable from *one city to another*, provided the general circumstances of the two are similar or analogous; that is, I believe the unknown and obscure cause of Yellow Fever is transportable from place to place, and in a variety of modes."

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INSENSIBILITY DURING SURGICAL OPERATIONS, BY INHALATION.—Much has been said of late in some of our exchanges in reference to this matter. From them we gather that it is a patented preparation, and that the substance used is (in all probability) "an ethereal solution of some narcotic substance;" it is inhaled from a "small two-necked glass globe;" it renders the patient insensible for a period varying from two to forty-five minutes, or more; it is not safe even when administered in a skilful manner to children; serious and almost fatal consequences have followed the inhalation of it by adults possessing susceptible constitutions, all of which render it (when administered judiciously) a limited, dangerous, and uncertain preparation—even supposing it to be presented to the profession in a proper manner, which, we are compelled to say, is not the case. Nor is this all. We are sorry to see many of our brethren, at home and abroad, stooping from the exalted position they occupy in the profession, to hold intercourse with, and become the abettors of, quackery in any form. Such doings are certainly contrary to the ethics of the profession, and should not be tolerated for a moment in any one.

PATHOLOGICAL SOCIETY OF LONDON.—This society was formed in October last. Its President, Prof. C. J. B. Williams, opened the society by a very able address, characteristic of its author. Among the members present, we noticed the names of Drs. Copeland, Jones, Roget, Bennett, Ramsbotham, Bird, Johnson, Liston, and Dalrymple, all of whom are already

known to the profession in America. With such men as these to participate in the proceedings of the London Pathological Society, we expect to see it, ere long, vie with its sister, the Dublin Pathological Society, whose doings are already familiar to the profession throughout the world. It is from such organizations as these, and similar others, that we must look for new light to be thrown upon the study of Pathology, and the intricate mesh-work of disease to unfold itself before the combined talent of the master minds there congregated. The study of true Pathology has but just commenced, in the strict sense of the word; it is but the child of a few years; and with the new aid afforded by Animal Chemistry, and the more general employment of the microscope, we expect soon to arrive at more certain and correct conclusions. Its essential value to the practitioner of medicine no one can question for a moment.

We sincerely hope that the profession in America will not be content to follow in the wake of their English brethren. With the advantages afforded us for the study of disease in all our large cities, containing, as many of them do, numerous large hospitals, we would respectfully urge upon our brethren the immediate formation of societies for the advancement of this most desirable object. The field is ample, the material abundant; why not contribute our mite to the advancement of this department of medical science? It is with pride we notice that the New York Pathological Society has permitted the publication of its truly valuable proceedings, and we shall with pleasure, from time to time, as our space will permit, copy from our able cotemporary its numerous valuable cases.

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Medicine in China.—Since the publication of our last number we have received the first Volume of the Transactions of the "China Medico-Chirurgical Society." This Society was formed in May last, at Victoria, Hongkong. President, Alfred Tucker, Esq.; Secretaries, B. Hobson, M.B., George K. Barton, Esq.; Librarian, G. H. Young.

The objects contemplated in the formation of this Society are—

"1st.—The bringing into more intimate intercourse medical brethren in China, for the sake of giving and receiving information on Medical and Surgical subjects.

"2d.—The formation of a Library, where all the best periodicals and the valuable standard medical works of the day can be had.

"3d.—The discussion of topics relating more particularly to the diseases prevalent in China, and to the native Materia Medica."

The meetings of this Society are held on the first Tuesday of each month, and are well attended. Many valuable and interesting papers have been read by the members at the several meetings of the Society. The Introductory Address by its President, "On the Advantages to be gained by a Medical Association, and a Cursory Review of Diseases incidental to Europeans in China," we have read with much satisfaction, and wish that our limits would permit an extended review The address, among other matters, contains a statistical table of the first 1000 patients admitted into the Hospital: out of this number 359 were cases of Dysenteria, 195 of whom died, and 36 remain invalided. This is the disease that makes such fearful havoc among the European settlers. It is estimated that of the whole number of deaths 31.5 per cent. die of this disease. In a future number we shall give our readers a short account of it, with its pathology and treatment. The Transactions also contain several other interesting and truly valuable papers, which reflect great credit upon their authors, and not only upon them but upon the Society as a body; all of which in due time we hope to lay before our readers. Among the other objects that the Society has in view, is the formation of a Medical College where Chinese youths may be educated for the profession. This is a great desideratum in the evangelization of China, and commends itself to the confidence and support of all who feel an interest in the consummation of this most desirable object.

In conclusion, we look upon the formation of this Society as the commencement of a great change in China, not only in its medical, but also in its political and religious history. A vast field lies open before the members of this society, rich and overflowing in materials for observation, the improvement of which will confer upon them the esteem, admiration, and honor of their professional brethren throughout the world. Long may they be blessed in the field of their operations, and in the pursuit of their noble calling.

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Medical Schools in New York.—It is with feelings of much satisfaction that we notice the continued prosperity of the Medical Schools in this city. Many causes which it is unnecessary to mention at present, have tended materially to lessen the number of medical students in attendance at the several schools in the United States; and notwithstanding this, there are, judging from observation, at present in this city, as many if not more in attendance than there were at the last session. This fact speaks for itself of the superior advantages possessed and facilities offered by New York over her sister cities in the study of Practical Medicine. We hesitate not to say, that a few years more will see this city the emporium of Medical Science, as it is now that of Commerce, in America it requires not the ken of the profound philosopher to perceive this. It is evident to even the casual observer, that New York is destined, and that too at no distant day, to become the Paris of America. These reflections have forced themselves upon our minds, while we have glanced over and compared the present with the past history of medicine in this city.

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Buffalo Medical School.—It will be remembered that in our last No. we noticed that the faculty of this college was fully organized, and that the first course of Lectures would commence on the 24th Feb. next. Since that time we have received its annual circular, from which we learn that every exertion necessary will be made to fulfil the promises held out by the faculty. Students are admitted free of charge to the "Buffalo City Hospital" at such hours of the day as the several medical officers are in attendance; the attending Physician and Surgeon of which hold the respective chairs of Principles and Practice of Medicine and Surgery, in the College.

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National Medical Convention.—The Faculty of Geneva Medical College have appointed Professors Charles A. Lee, C. B. Coventry, and James Webster, as delegates, to represent that Institution in the next National Medical Convention.

The Faculty of the Medical Department of the Buffalo University have elected Professors F. H. Hamilton, Austin Flint, James P. White, and Geo. Hadley, as Delegates to the National Medical Convention, to assemble in Philadelphia on the second Wednesday of May next.

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Sick at Monterey.—Dr. N. S. Jarvis, U. S. A., well and favorably known to many of our readers, writes us from Monterey, Mexico, under date of Nov. 8th, 1846, as follows:

"Our wounded in the hospital are rapidly improving, and we will doubtless, in a very few days, again take up our line of march, to record again, I fear, before it terminates, more cases of wounds and disease, consequent upon the fierce struggles of war. The 3d Division is already ordered to Saltillo, and will leave on Thursday next. Orders have not as yet been issued in regard to the movement of the two remaining Divisions (1st and 2d). There is no doubt, however, that they will unite with the 4th Division now at Camargo, and march to Tampico. I shall probably accompany the last army."

Dr J. promises to keep our readers informed of matters appertaining to the health and diseases of the army.

Proceedings of a Meeting for the Establishment of an Academy of Medicine and Surgery.

A meeting was held on Saturday, Dec. 12th, at 1 o'clock, P. M., at the Lyceum of Natural History, 561 Broadway, in obedience to a call in the public papers signed by Valentine Mott, Alexander H. Stevens and Isaac Wood, as the representatives of the three great Medical Associations of the city, viz., the Colleges and the County Medical Society; the object of which was to ask the co-operation of their medical brethren in an undertaking to elevate the character of our profession—to advance its interests, and to increase its usefulness by furnishing facilities for social intercourse—promoting harmony amongst its members, and the means of mutual improvement. In the prosecution, it being proposed to establish an Academy of Medicine and Surgery, and to provide a permanent place for its meetings.

The meeting was organized by calling Dr. John Stearns to the Chair, and the appointment of Dr. F. Campbell Stewart as Secretary. Dr. Mott, in an energetic speech (which it was not our good fortune to hear), stated the objects of the meeting.

Dr. Stevens then arose, and in an able address, moved the reading of certain resolutions. It was then resolved that these resolutions be taken up, and considered separately.

Dr. Manley arose and remarked that the time had come that something must be done to change the character of the profession; that owing to accidental circumstances, but mainly to the rampancy of quackery, the public, he did believe, had but little confidence in our profession; and that if those members of the profession could be brought together, that preferred life to the dollar, this confidence might be restored. This he said to help along the objects of the meeting, of which he cordially approved.

The Secretary then read the following resolution:—

Resolved, That it is expedient to organize an Academy of Medicine in this city, which shall represent if not embrace the great mass of regular practitioners residing here.

Dr. Reese arose for the purpose of strengthening the resolution, which he considered would sufficiently meet the circumstances stated by the gentleman who had preceded him. It offered, in his opinion, the adequate and only remedy to professional degradation. If a line could be drawn between science and roguery, and recognized among ourselves, the public would soon learn who were upon the one side, and who upon the other; if this distinction could be made, everything would be done to redeem the profession from the injuries recently inflicted upon it, and he trusted that it would pass unanimously.

A pause here ensuing, Dr. Isaac Wood arose and said that he trusted that the resolution would receive a full discussion, as it was exceedingly important that a free expression of professional sentiment should be had upon a subject of so much consequence.

Dr. Manley trusted that if any one present had any objection to the resolution, he would now say so; that it might be out of the power of any hereafter to cavil and say that they had no chance to express an opinion upon the subject.

Dr. A. M. Cox desired to have an explicit definition of what was meant by the term regular practitioner; he wished to know whether the mere fact of an individual holding a license or diploma would entitle him to membership, and whether those practising homœopathy would be admitted; because many regularly educated men were practising in a manner opposed to the generally recognized views of the profession.

Dr. Mott said that it was not in the power of this academic association to prevent those who were graduates, licentiates, orlegally qualified in any way, from joining it, if their course was honorable and legitimate. The Association would not admit irregular men; it was not worth while to designate them: there could be no difficulty in understanding who they

were. Any swerving from the path of professional rectitude must be excluded. The least savor and tincture of Homœopathy, said Dr. M., will not be recognized by us of the old school. We must all alter our generation and be educated anew before we can believe (I speak for myself) in the doctrine of infinitesimals. It was never intended that those gentlemen should come into this Association. He said that if any homœopathic gentlemen were present, he thought no offence should be taken by them, inasmuch as our differences of opinion were so great that we could not walk together.

Dr. STEVENS observed that the term regular physicians was sufficiently understood, and might be defined hereafter by a board appointed for the purpose.

Dr. ISAAC WOOD observed that it was not intended to exclude merely irregular practitioners, but all association with irregular practitioners. That membership of this Association would be a *carte blanche* to every one to the confidence of the public.

Dr. FRANCIS thought that the discussion of this subject might be postponed until the Association was organized; that the mark between the regular and irregular practitioner might be made so emphatic and strong as not to be mistaken; the time had come when they ought to be made, and if fully established specific laws could hereafter be adopted, the profession would be placed upon the footing where all must be desirous of seeing it. He trusted the resolution would be allowed to pass unanimously. (Loud cries of question, question.) The first resolution, being again read by the Secretary, was carried without a dissenting voice.

The Secretary then read the second resolution:—

Resolved, That it is expedient to procure a building to be devoted to the Academy of Medicine, and that shall also be known as a Hall in which the regular members of the profession may meet on common ground.

Dr. STEVENS moved that this resolution lie upon the table until the Committee should have reported a constitution and by-laws. Carried.

The third resolution was then read by the Secretary:—

Resolved, That a subscription be now commenced for this purpose.

This being involved in the former, it was passed over for the present.

The fourth resolution was carried unanimously:—

Resolved, That a Committee of —— be now appointed to prepare a Constitution and By-laws.

Dr. VAN RENSSELAER proposed that this committee consist of five.

Dr. MANLEY wished that the committee should be large, as it would better represent the sentiments of the profession. A large committee would consult public opinion, and the end would be better answered in one meeting than in five. The discussion had better be cooked in the Committee room, and brought ready to digest before the next meeting. He moved that the Committee consist of eleven. Carried.

On motion of Dr. STEVENS, it was resolved that the Chairman of this meeting act as Chairman of the Committee, and appoint the other ten. The Chair then appointed the following gentlemen as a committee, viz., Drs. FRANCIS, BLISS, J. WATSON, GRISCOM, BENJAMIN DRAKE, BORROWE, REESE, A. S. PURDY, J. R. WOOD, and TOMES. Several persons now objected to the manner in which the Committee had been appointed. And after a desultory conversation, and the loss of a motion to reconsider the resolution authorizing the appointment of the Committee by the Chair, the same motion for reconsideration was renewed by Dr. STEVENS, and carried.

Various propositions were then made, as to the manner in which a Committee should be appointed; and Dr. BUEL made a motion that it should be nominated by the meeting and then balloted for. The meeting was reminded, however, that this motion was out of order so long as the one which granted power to the Chair to appoint the Committee remained in force; that a motion to reconsider had prevailed, but that until it was rescinded, the original resolution was in full force.

On motion by Dr. MANLEY the original resolution, that the Committee should be appointed by the Chair, was rescinded. Dr. BUEL'S resolution was now in order, but at the request of several gentlemen, he consented to withdraw it.

On motion, it was then resolved that the gentlemen who had been nominated by the Chair should, together with Drs. STEVENS, MOTT and ISAAC WOOD, constitute the committee.

Dr. STEVENS moved that this Committee be instructed to report to this meeting, at this place, on the first Wednesday in January next.

On motion, it was resolved that when this meeting adjourn, that it adjourn to meet at the same place, on the first Wednesday in January next, at 1 o'clock, P. M., and that due notice of the same be given.

The meeting then adjourned.

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DR. BATCHELDER'S ARTICLE.—It is with much satisfaction that we present our readers with the article from Dr. Batchelder. We would call the particular attention of the younger portion of the profession to a careful perusal of it, presenting, as it does, in a condensed form, a clear and distinct view of the surgical anatomy of this region (the angle of the jaw), a thorough knowledge of which is of such essential value to the practical surgeon.

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MARSHALL HALL AND DR. DOWLER.—We have received a communication from the able author of the "reflex doctrine," complaining of the language employed by our correspondent, Dr. Dowler, in the May number of our Journal, and especially of the imputation of "Materialism," imputed to him by Dr. D. This charge is denounced as "cowardice and calumny, refuted by anticipation, by § 9, &c., &c., &c., of my (his) work on the Diseases and Derangements of the Nervous System." "The rest," Dr. Hall, remarks, "is as little founded in truth, moral or scientific. Many have been the attacks on the poor reflex doctrine, but none to compare with this last, and not one with *one* fact, or sound argument against it, Dr. Dowler's inclusive. Many and great are the efforts being now made here to sustain the *Status* of our profession. I am sorry that you should have sanctioned by your name, in any way, what must certainly be considered as an attempt in the contrary direction." We are happy to find, however, that Dr. Hall does us the justice to think that we "did not mean any offence to him," in admitting Dr. D.'s communication.

It is due Dr. H. to remark that we agree with him in the opinion that the language of Dr. Dowler was unnecessarily severe, and we regret very much, that the objectionable passages were not modified or omitted before the article was published. This Journal was, however, established for the fullest and freest discussion of all matters pertaining to medicine, with the express understanding, that all authors who might feel themselves aggrieved, should have an opportunity of reply through its pages. The Editor has never assumed the responsibility of a single line, which has appeared in the Journal, with the exception of what has proceeded from his own pen, nor is he willing to do so for the future. The profession here want an *independent* Journal, open to all, biased by none, and such we claim ours to be. With respect to the distinguished author of the "reflex doctrine," it is no more than justice for us to say, that if there is a single man in the profession for whom we entertain a profound veneration or respect, *he* is that individual. His discoveries in connection with the functions of the nervous system, and his beautiful illustrations of his doctrines, both physiological and pathological, are of the very highest order of merit, and such as no man could have accomplished, unless endowed with extraordinary genius and penetration. But while we do homage to the splendid achievements of Dr. Hall, we may be allowed to express the opinion, that he is unnecessarily and morbidly sensitive to the attacks of criticism.

With regard to the *status* of the profession, both at home and abroad, we profess to be as zealous in its defence, and as earnest in our efforts to sustain it, as Dr. Hall himself.

While we are ready to admit that the labors of Dr. Hall have done much to enhance the dignity and importance of medical science, and even to elevate the *status* of the profession, we are disposed to deny that the admission of a criticism on his theories into our Journal, necessarily proves that *we* have taken a retrograde step, and are aiming to degrade the science, or depress the *status* aforesaid. Neither of these has anything to fear from free and open discussion. In conclusion, we return Dr. Hall our sincerest thanks for the expression of his favorable regards towards the Journal, and his willingness to promote the good objects for which it was established.

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Dr. Ashbel Smith.—This distinguished diplomatist and physician has been compelled by ill health to resign his commission in the Texan division of the invading army of Mexico, and has recently visited this city. From him we learn that the sickness among our troops on the Rio Grande has been very extensive and fatal, not less than 1500 men having fallen victims within the last six months. The health of Dr. S. has been considerably benefited by his visit to the north, and with proper care, we have no doubt, will soon be perfectly restored. Our Journal will hereafter be the medium of communicating some of the important results of his observations to the profession, especially in relation to the treatment of Southern fevers.

NOTICE.

An adjourned meeting of the Regular Practitioners of Medicine of this city will be held at the Lyceum of Natural History, No. 561 Broadway, on Wednesday the 6th of January, 1847, at 1 o'clock, to receive the report of the Committee appointed to prepare a Constitution and By-Laws for an "Academy of Medicine and Surgery."

F. CAMPBELL STEWART, M.D., *Secretary.*

New York, Dec. 30, 1846.

2.

Foreign Medical Intelligence.

ANATOMY AND PHYSIOLOGY.

THE ANATOMY OF THE EXCITO-MOTOR SYSTEM. By MARSHALL HALL.—The history of the protracted disputes on this topic would be full of instruction, but it is not my present intention to write it. My object is, to lay before the readers of the Lancet, in a few words (I am always afraid of occupying their time and my own needlessly), *the* argument, or rather, *the* plain and simple PROOF, of the distinct anatomy of the excito-motor system.

Does any one doubt the distinct anatomy of the system of cerebral nerves—of the nerves of sensation and volition?

The *very same* proof which exists of this part of the nervous system, exists in regard to the excito-motor system. It exists in the pneumogastric nerve, or, as it may be better designated, the pneumogastric system of nerves.

If the pneumogastric be sentient at all, it is the least sentient of all incident nerves. What is it then? It is excito-motor! It is, emphatically, the internal, excito-motor nerve!

Why go to complex structures, when a simple one exists? Why go to the lower order of animals when the mammalia, and even the human being, afford us the proof we require?

The superior and the inferior laryngeals are the associated excitor and motor nerves of the larynx.

The bronchials are associated excitor and motor nerves of the bronchia.

The pharyngeals and œsophageals are associated excitor and motor nerves of the pharynx, of the œsophagus, and of the cardia.

Lastly, and most strikingly, the pulmonic part of the pneumogastric nerve is, as the associate of the diaphragmatic and intercostals, the internal excitor of respiration.

There is, in short, as I have said, the *same* proof of the distinctness of the excito-motor system of nerves, as of the sentient and voluntary, and it is both idle and ridiculous to dispute the fact any longer, or to appeal to other parts of the nervous system than the grand pneumogastric, or to other tribes of animals than the mammalia, for proofs not needed. As confirmations of a truth already established, these researches are, of course, interesting enough. I am myself preparing a paper on the pneumogastric system of animals of limited and of diffused respiration—in the mammalia; and in birds and insects. In birds, the spinal nerves are, doubtless, in their distribution to the diffused breathing cells, analogous to the pulmonic branches of the pneumogastric. In insects, *each segment* with its spiracles (analogues of the larynx, trachea, and bronchia), is endowed with a nervous system entirely analogous to the laryngeals, and to the pulmoniac branches of the pneumogastric, and the diaphragmatic, or intercostals! Then we have to inquire into the nature and office of the lateral nerve in fishes. As in birds, the respiratory nerves are, probably, equally used for flight and for respiration; so in fishes, the lateral nerve is, probably, for swimming and for respiration.

But to return to my topic. The proof of the distinct anatomy of the

excito-motor system is afforded by the pneumogastric—the internal, purely, or almost purely, excito-motor nerve.

If, however, we would examine other and more complicated tissues, the proof lies, not, I fear, in the dissection and tracing of fibres, but in physiological experiment; the cerebral system is, so tested, *in*-excitor throughout—in its centre, in the nerves of special sense; the excito-motor system is, in its centre, and in its incident and reflex relations, what its designation implies.

It is pitiable that there should any longer be any dispute on the subject, or that detraction should still attempt to wrest the credit of adducing *the* proof, in any degree, from myself, or from physiology.

Amongst other attempts of this kind, one has been to propose a change in the designation which I had given to the nerves of the reflex arc—and a most unfortunate change, too. The terms incident and reflex *imply* some very definite association, or Law-*relation*, between the two—a real phenomenon of the most remarkable kind. But the terms *afferent* and *efferent* are, in this respect, utterly insignificant; whilst the meaning which these words do convey, of something borne to and from, is probably altogether erroneous.

The ray of light, which is now incident and immediately afterwards reflected, is the *same* ray, modified, directed, and returned by the reflector, whether it consist in locomotive particles, or in vibration. The same idea is attempted to be conveyed by the terms incident and reflex nerve. There is, in these nerves, and in their connection through the spinal marrow, some extraordinary recondite connection, so that, for example, the excitation of the superior laryngeal sends forth some mysterious messenger to the medulla oblongata, whilst this returns it in the just channel, the inferior laryngeal, so as to effect the closure of the larynx; whilst the excitation of the pulmonic branches of the pneumogastric excites, through the diaphragmatic and intercostal nerves, the contraction of the muscles of inspiration, precisely, definitely, and no other.

The ordinary reflexion of a ray of light, or the polarisation of a ray of light, is not more definite.

The effect produced is obviously *designed*, not by the animal—for its brain may be removed without interfering with this process—but by an omniprovident Creator. This obvious design has misled many to think that there are feeling and volition in the spinal marrow.

The terms incident and reflex are therefore full of meaning; whilst the terms afferent and efferent either convey no meaning at all, or an erroneous one. In this suggestion, the Law *of association* of the effects of excitement, its incident course, its modification and direction by the spinal marrow, its reflex course and destination, were unperceived.

How much, then, is conveyed or implied in that one word, *reflex*,—incidence, reflexion, appropriate combination, and destination! And how devoid of all meaning are the words afferent, and efferent, not very modestly attempted to be substituted for it!

I beg my reader to study and compare the physiological movements in the acts of inspiration, with their pathological forms in asphyxia: the first are reflex, normal, and beautifully appropriate; the second are, in respect, abnormal and deranged.

My opponents are much disposed to speak of the class of reflex actions, in general terms, as known to Redi, Whytt, &c. This is another ill-chosen but deceptive phrase. The reflex *actions*, as I have *always* said, were spoken of by many previous physiologists; but the phrase I have adopted from the very beginning,—for the very title of my first paper,—was reflex *function;* and this expression, with its fulness of meaning, as applied to all the acts of ingestion and egestion in the animal economy, had been used, could have been used by no one; for as the idea of an incident excitor nerve, with its physiological relations, did not exist in anatomy, so the idea of a reflex function, with its anatomical relations, did not exist in physiology.—*Lancet.*

ABSENCE OF CORPUS CALLOSUM.—M. Paget has communicated to the Med. Chir. Society, the details of a case in which the middle portion of the fornix and the whole of the septum lucidum were absent, and in which, in place of the corpus callosum, there was only a thin fasciculated layer of white nervous matter, ¼ inch in length, but of which the fibres extended into all those parts of the brain into which those parts of the healthy corpus callosum can be traced. Behind the imperfect corpus callosum, the optic thalami, the middle commissure (which was very large), the posterior commissure, and the pineal gland lay exposed after removal of the velum. The lateral parts of the fornix and the rest of the brain were quite healthy. The patient was a servant girl who died of pericarditis. She had displayed during life nothing very remarkable in her mental condition beyond a peculiar want of forethought and power of judging of the probable event of things. Her memory was good, and she possessed as much ordinary knowledge as is commonly acquired by persons in her rank of life. She was of good moral character, trustworthy, and fully competent to all the duties of her station, although somewhat heedless; her temper was good and disposition cheerful. From these facts M. Paget is inclined to regard the functions of the corpus callosum as connected with the highest operations of the mind, especially as in the few cases in which it has been found deficient, or altogether absent, the mind has possessed a moderate average power and capacity for knowledge, and all the lower functions of the nervous system have been perfectly discharged.—*Ranking's Abstract.*

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SURGERY.

On the use of Caustic for the bite of Rabid Dogs.—"The best caustic, I apprehend, for you to use on these occasions is the caustic potash; and for this reason: that it dissolves the parts with which it comes in contact and that afterwards the dissolved caustic penetrates still further beyond, the part to which it has been actually applied. If the tooth penetrate to the cellular membrane, by the time that you are consulted some of the saliva may have reached the cells beyond, and if you apply the nitrate of silver, or the nitric acid, these will coagulate the fluids and harden the solids, while the caustic potash becoming diffused will follow the course of the saliva. A convenient way of applying the caustic on these and some other occasions is this: melt it in a silver or platina spoon, and, when melted, dip into it the blunt end of a probe. It will come out with a varnish of the caustic upon it; dip it in again until the button of caustic has attained a sufficient size. By means of a probe thus armed you may carry the caustic even into a very narrow wound, so that you are sure it will penetrate wherever the dog's tooth has penetrated; after which, from the particular nature of the caustic (as I have just explained) you may be certain that it will penetrate still further, and as far as the poison can have reached."—*B. Brodie.*

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The application of caustic to tumors on the scalp must be made with great caution, as appears from the following case:—

"A surgeon applied the caustic potash to the scalp, with the view to make an issue in a man's head, who was laboring under a head-ache and nothing else. When the slough had separated a piece of the occiput was exposed, as large as half-a-crown or larger. The patient was soon seized with a sort of strange symptoms, and died. It was found that the dura mater had become detached from the inside of the bone, just opposite the part where the pericranium had been destroyed on the outside; and it was clear that the sloughing of the dura mater was the cause of the man's death."

When the caustics are used, it is prudent to have some counter-agent at hand to stop their action on the sound parts around. "Acids may be neutralized by alkalies; caustic potash may be neutralized by vinegar,

or by a solution of the diacetate of lead. If you are afraid of the nitrate of silver burning the neighboring parts, its action may be neutralized by common olive oil. A solution of bicarbonate of potash will decompose chloride of zinc, and so of other caustics."—*Med. Chir. Rev. July*, 1846.

Treatment of Sprains.—The means which Dr. Poullain and the above authorities recommend in lieu of leeching and cataplasms is the *immediate and continued application of cold* by immersing the part in water. The cure is not only prompt but complete, inasmuch as there is no remaining *engorgement* to lay the foundation of future mischief, and the patient is enabled to employ the joint as actively as heretofore. This would be a great point gained, even if the time consumed in the treatment were as great in the one plan as the other, which it is not. Many cases of its success are related in the paper, and although, of course, in the great majority of instances, the ancle is the joint affected, sprains of other joints may be treated in just the same manner, except that in those, such as the knee, in which immersion may be difficult, the application of wet compresses or irrigation may be substituted. The treatment, indeed, is not novel, for it was recommended by Boyer, and more recently by M. Begin.

"Of 90 patients whom I have treated by the aid of cold and resolvents, 23 were cured in 6 days, 10 in 8 days, 22 in 11 days, 28 in from 11 to 15 days, 4 in from 20 to 25 days, and three at the end of a month. None of these persons have continued lame. Seven felt the effects of their accident for several months, without, however, being prevented attending to their duties, and becoming quite cured. * * * * * * If this mode of treatment has incurred blame at the hands of some surgeons, it is because it has not been sufficiently, promptly and freely employed, and it is therefore necessary to lay down some rules upon this point.

"The immersion should be resorted to as soon after the accident as possible. Recourse may be had to it also three, four, five, six, or even 12 hours after, but then its sedative effect is less prompt and the cure more tedious. The foot should remain at least *two hours* in the bath, and oftentimes much longer. It may sometimes be left in for entire days; and as a general rule the part should not be removed until it becomes completely cooled, the water being renewed as often as it becomes warm. This prolongation is easily obtained, for, after the first hour or so (during which the pain is sometimes almost insupportable) the immersion becomes bearable, and the patient is himself very desirous for its continuance. Iced water does not possess any superior efficacy to that of a temperature of 37° or 39°, provided this be equally maintained. As soon as the limb is removed from the bath it must be surrounded by a roller previously moistened with Goulard water or camphorated spirits, some of which must afterwards be applied to it from time to time. So effectually are congestion and swelling in this way diminished, that the bandage usually becomes loose within the 24 hours. It must be re-applied until all swelling and pain have disappeared, which is generally the case in from three to six days. The patient may now be allowed to walk, continuing however the use of a bandage for ten or twelve days.

"If 14, or even six or twelve, hours after the application of the wet bandage, pain still continues, or throbbing is felt by the patient, it must be taken off, and the limb again immersed in the water for a longer period than at first, even for a whole day if requisite. This second immersion is sometimes unsuccessful, but fortunately it is very rarely required, as the first almost always suffices.

"If the sprain is several days old, the limb swollen and painful, while nothing has been done for it, a free local bleeding is a necessary preliminary, after which the bandage and cold lotions, or perhaps immersion itself, should at once be resorted to. These means are, however, now of far less service than when employed soon after the occurrence of the accident."

When the sprain has been badly treated the joint may become the seat of a chronic enlargement, which is dissipated with difficulty, and only after the persevering use of compression. MM. Begin and Velpeau, indeed, employ this in the earliest stage of sprain as a powerful means of preventing inflammatory swelling. Dr. Poullain employs to this end a starched many-tailed bandage. Whatever means are used, the case is tedious and may also require the aid of stimulating liniments, or, if very obstinate, of the douche as employed at the mineral springs, and even this does not always dissipate the enlargement.—*Rev. of Poullain, in the Brit. & F. Rev., July*, 1846.

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Treatment of Sloughing Ulcers.—"In a great majority of cases, the sloughing process had advanced far before the patients were received; in some, as formerly stated, bones were denuded, and tendons and ligaments destroyed. But in very few, even where the destruction was greatest, was treatment by incision omitted; and in those only where, from fever or flux, there was great constitutional debility. The amount of incision was regulated by the extent of disease in the tissues under and around the ulcer. In some instances, where it did not descend below the integuments, the ulcerative process being phagedenic rather than gangrenous, and the destruction neither very rapid, nor reaching under tissues, it was sufficient to relieve the more superficial vessels, and to substitute scarification for what is understood by incision. More frequently, however, it was necessary to use the knife freely, passing it through the skin, and into the underlying cellular structure. Whatever the proper depth might be, the scalpel was carried quickly from beyond the limit of surrounding disease to the ulcer, often through it. The distance between the incisions varied, but was generally less than a quarter of an inch: their direction was most frequently parallel in the line of the limb, occasionally radiated from a circle, clear of the affected integuments, to the ulcerated centre, according to the position of parts, and degree of vascular action. In many cases, it was necessary to repeat the practice; in some, frequently.

"The effects of this mode of treatment were generally prompt and most satisfactory. The relief to pain and irritation was often immediate; and, although the remedy was a painful one, patients sought rather than shunned its repetition, upon the recurrence of bad symptoms; so unequivocal was the benefit derived from it.

"Instead of sanious fœtid discharges from the ulcer—its ashy, livid, or black surface, and abrupt margin—there was secretion of pus, separation of sloughing matter, and a crop of florid healthy granulations; the surrounding parts, which had been tumid, darkly inflamed, or œdematous, or having both conditions combined, became flaccid and shrunken, assuming the pale complexion of health. In no instance did the sloughing action extend to the incised surfaces, which either healed speedily by adhesion, or more slowly, but not less surely, by granulation."—*J. Wilson.—Med. Notes on China.*

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Treatment of Fracture.—Sir B. Brodie gives no sanction to the operation of cutting down on the broken ends of the bones, and sawing off a portion of each of them, for the purpose of procuring union, and supposes that no modern surgeon, having a moderate share of prudence, would undertake it. In reference to the introduction of the seton in these cases, he remarks, that the result of the practice in this country appears to be, that sometimes it is successful in the upper extremities, but that where it has been performed on the lower extremities, as far as he knows, it has only succeeded in a single instance. The operation is uncertain and the result tedious. Sir B. Brodie speaks favorably of the treatment by pressure proposed by Mr. Amesbury, and states that it succeeded perfectly in three cases which were attended with him. This success, in one of

these at least, was not so complete as is represented, since it appears that there was so much yielding motion between the upper and lower portions of the fractured femur, "that it was plain that the union could be merely ligamentous." In this mode of treatment the pressure must be considerable, so as to cause some inconvenience to the patient, both from pain and from swelling of the limb below. But the inconvenience is only temporary.

"The principle of Mr. Amesbury's practice is simply that of keeping the ends of the bones in perfect repose, and at the same time applying pressure, particularly on the broken surfaces, so as to keep them in the closest possible contact with each other. Of course no general rule can be laid down as to the mode of attaining this object. In a case of transverse fracture, one kind of apparatus must be employed, in one of oblique fracture another, and in one of comminuted fracture a third. The apparatus will also differ accordingly as it is a fracture of the arm, the forearm, the leg, or the thigh. In a case of oblique fracture a very simple apparatus will do all that is required. Secure the limb by fastening it to a single rather broad wooden splint. Apply a pad of thick leather on each side of the fracture, and then a tourniquet, by which the two opposite surfaces of bone may be kept firmly squeezed against each other. By means of the tourniquet the pressure may be easily regulated, and increased or diminished as the patient can bear it. The best kind of tourniquet is not the common one, known under the name of Petit's, but one which occupies a smaller space, invented by the late Mr. Savigny, and sold by Philip and Whicker in St. James's street.

"I do not say, however, that this method always succeeds. I had tried it in the case of the little boy whose case I have already mentioned (on whose leg I afterwards used the seton), and without advantage. There was another patient in this hospital on whom it was tried for a considerable time under Mr. Amesbury's observation, and no union was effected; and it appears that Mr. Amesbury met with some cases in his own private practice, in which he has adopted it, and no doubt done ample justice to it, but in which it has failed. Still it has proved a very successful method on the whole, and certainly very much more successful than any other."—*Sir B. Brodie.*

Inverted Displacement of the Bladder.—Mr. Crosse, in the *Trans. of the Prov. Med. and Surg. Asso., for* 1846, gives the history of a case of rare occurrence, which is important, as exhibiting the value of a careful examination and consequent just diagnosis, and the dreadful risk attending a mistake in this particular. We extract the more material points of the narrative:

"In the year 1829, a highly respected colleague of mine, since deceased, received under his care a healthy-looking female child, aged between two and three years, on account of a tumor, about the size and shape of a walnut, projecting visibly at the external *labia pudendi.* It was of a florid red color, and somewhat granulated upon its surface, so as to resemble a large strawberry; and the surgeon entertained a notion that it was a vascular tumor, which might be removed by a ligature, on which account he requested me to inspect it.

"After a slight examination, I expressed my doubts as to its being a vascular tumor, and dissuaded him from a hasty application of a ligature. I could not, however, immediately explain its nature, having no conception how such a tumor could be formed by the displacement of the parts only, without any superadded morbid growth. Towards the posterior part of the tumor, and on its sacral aspect, there was an aperture, which was conjectured to be the entrance into the displaced urethra. A very small female catheter easily entered this aperture, and passed a channel a little to the left side of the median line: urine distilled in drops through the catheter, but there was not a gush, although the instrument had entered so far that we

concluded it must have reached the cavity of the bladder. Besides what thus oozed through the catheter, slightly tinged with blood, there was an oozing of urine from another source, which was not explained until a second and more strict examination, instituted a few days afterwards, on my casually coming to the patient's bedside, just as the surgeon was prepared to apply a ligature round the neck of the tumor.

"I now found, concealed in a fold of the tumor, and near to the posterior junction of the labia, two orifices not far asunder, from which the urine oozed, and which were evidently the vesical termination of the ureters. On pressing the tumor firmly, as if to reduce it like a hernia, I found it yield and pass gradually behind the symphysis pubis, and within the labia; and under a continuation of the taxis it all retired, leaving the external parts in their proper shape and position. A passage remained, through which the tumor on retiring had taken its course, which was actually the dilated urethra, into which I *could* and *did* introduce my little finger, until it fairly entered the cavity of the replaced bladder; for it now became clearly demonstrated that the vascular red tumor, externally presenting itself as first described, was the urinary bladder in its entire thickness, including its mucous, muscular, and peritoneal coats, prolapsed through the dilated urethra, and at the same time inverted or turned inside out. The proper lining membrane of the bladder became, in the progress of this displacement, the external covering of the tumor. As fast as the urine was secreted by the kidneys, it oozed from the terminating orifices of the ureters, which were concealed within a fold of the exposed surface of the tumor, and approximated to each other. The neck, or deepest and narrowest part of the tumor, just concealed within the labia, was covered by the inverted line of the urethra, the inversion being complete.

"In this instance, had a ligature been efficiently applied to the neck of the tumor, as was contemplated, the bladder would have been removed, including all its coverings, the ureters cut through just above their terminating orifices, and the peritoneal cavity largely opened, with a necessarily fatal result!

"As the friends of the child could not be applied to, the history was imperfect. It was stated that the tumor had existed for a considerable time, and been always attended by stillicidium urinæ; also that it had been once replaced, but descended again, shortly before it came under my observation. During the short period that the child remained under my notice, after the replacement of the bladder, there was no relapse; and and since this account has been sent to press, I have been fortunate enough to ascertain, and to be enabled to add, that the patient is still living, after an interval of sixteen years, and is a healthy young woman, save only the affliction of the incontinence of urine, with which she has been constantly troubled, but without any relapse of the vesical displacement."—*Brit. & For. Med. Rev., Oct.*, 1846.

MEDICAL PATHOLOGY AND PRACTICAL MEDICINE.

Clinical Lectures on Diarrhœa of Infants.—By Professor Trousseau.—*Treatment.* When bilious diarrhœa is the consequence of mere nervous excitement—when it is caused by fear or anger, as tears by grief, or salivation by appetite—opium gives relief in a very short time. In these cases, which you will find to be characterized by the absence of any sort of suffering during the first twenty-four or thirty-six hours, the disease will speedily yield to the influence of hypnotic medicines. Half a drop of Sydenham's laudanum is a sufficient dose for a child under six months; others, it is true, will bear two or three drops, but that dose is too powerful a narcotic for the many. The laudanum should be dissolved in an ounce mixture, whereof the infant shall take a tea-spoonful every three or four hours; but when the disorder has lasted beyond the specified time, opium ceases to possess its salutary effect, because the mere presence of the increased

secretions on the mucous surface has sufficed to bring on an irritation which did not exist at first. Then we must have recourse to neutral salts.

In mucous diarrhœa we have generally derived benefit from three sources: saline purgatives, calomel, and rhubarb. The dose of calomel we recommended is one-fifth of a grain daily, mixed with half a drachm of sugar. This should be continued two or three days at furthest. As to rhubarb, it is the "syrup" we use, the so-called "sirop de chicorée" —a good preparation in everything but its absurd name, which insinuates the idea of the efficacy of the endive, which is, on the contrary, perfectly inert. Great attention should be paid to the child's diet; his food, less abundant than usual, should be chosen with great care. Milk is the most proper food for young children; fecula and broth also may be given after the expiration of the first year, and the drink should be in small quantity. In the choice of food the physician must also allow himself to be guided, in a great measure, by the idiosyncrasy of the child, and the mother's remarks on the peculiarities of his appetite.—*London Med. Times.*

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Use of Castor Oil in Mucous Membrane cases. By Dr. Thomson, Burton-on-Trent. [Dr. Thomson believes there are but few cases of diarrhœa occurring in infants under a year old but what may be cured by castor oil, even when ulceration has taken place: as shown by a predominance of blood in the evacuations—tenesmus, abdomen tumid and painful, mouth dry and aphthous, &c., &c. He gives the castor oil with yolk of egg, and according to circumstances does or does not add a gentle opiate. He recommends, however, as accessory, the warm bath, liniments to the abdomen, and occasionally a mild mercurial dose. He observes]—

No mercurial so quickly changes the character of the evacuation as the emulsion, which only requires to be steadily persevered in. The following is the form in which I generally prescribe it for infants:—For an infant of from two to four months old: ℞ Ol. ricini ʒi—ʒiss, Vitelli ovi semis., Aq. menth. fœniculi, aa, ʒi. Ft. emuls. Sumat. coch. parv. bis die. To the above, from two to six drops of laudanum may be added, or not; but, of course, this, as well as the size and frequency of the dose, must vary with the case. The mixture is generally taken readily, and even liked. The same preparation is equally useful in that form of intestinal affection which is met with in children of from one to nine years of age, but presenting slightly varied symptoms, such as the tendency of the evacuations to become watery, brown, black, and very offensive; the picking of the lips, nose, &c. In a case of this nature which lately came under my care, the patient, a boy aged three years, lay almost insensible and somnolent. The evacuations, resembling black dirty water, and very offensive, were passed eight or ten times in the twelve hours. Other symptoms of subacute inflammation of the mucous membrane were also present. After the first dose of simple emulsion, there was no motion for thirty-six hours, all the other symptoms becoming ameliorated. The medicinal action of oil is certainly much modified by its union with the yolk of egg, for the same dose which would act well as an aperient alone, when thus combined will scarcely act at all.—*Monthly Journal of Medical Science.*

MIDWIFERY AND DISEASES OF FEMALES.

Uterine Polypi and Ulceration.—Dr. Montgomery has published in the August No. of the Dublin Quarterly Journal of Medical Science, a very valuable paper on *Uterine Polypi and Ulceration, with cases.* Dr. M. deduces the following conclusions, as the results of his extensive observation on this class of diseases.

1. That small uterine polypi, or polypoid excrescences, are of frequent occurrence.

2. That they are often not discoverable by touch alone, and so escape notice.

3. That they may even elude detection with the speculum, especially if the instrument used is not capable of separating the lips of the os uteri.

4. That they are a common cause of ulceration and menorrhagia, one or both; the cure of which requires, as a preliminary step, the removal of the polypus.

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Treatment.—As long as the process of sanguification is interrupted, and the elements of the blood disturbed, the vessels circulating that fluid will be found to partake of the general enervation: the contractile power of the vessels, as well as other vital functions, being found defective. Hence, a constitutional remedy will be necessary, as well as the collateral assistance to be derived from a favorable position of the body; for it must be observed that the preternatural distension of the veins and absorbents, and

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On the Natural Period of Gestation.—Dr. LERAY of Nantes, has drawn the following conclusions respecting the natural period of gestation, in a Memoir lately presented by him to the Provincial Medical Society in France:—

1. The natural term of gestation, as well as of premature delivery, has a direct relation to the menstrual periods.
2. The return of these periods, throughout pregnancy, bears a direct relation to the day of the month corresponding to that at which the menses last appeared, whatever number of days there may be in the month.
3. The time at which delivery takes place in the majority of females, whether at the full period or prematurely, corresponds to the day of the month at which the menses ceased, or it occurs within the week following.
4. Nevertheless the parturient pains may in some rare cases commence in a normal way, at the end of the first two weeks of the tenth month.
5. Every delivery which takes place before the period referred to, may be regarded as premature.
6. Every delivery which takes place after one week from this period, may be considered as protracted.
7. The premature are in far smaller proportion than the protracted cases, and rarely precede the specified term more than five days.
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MATERIA MEDICA AND PHARMACY.

"*Arseniate of Quina.*—This salt, first prepared by M. Bourières, has latterly been much used in France in the treatment of obstinate intermittents, and, it is stated, with much success; the chief obstacle to its more general employment being, according to Dr. Boudin, its extreme bitterness. It is readily prepared as follows: Dissolve half an ounce of sulphate of quina in boiling water, and precipitate with ammonia; wash and dry the precipitate, and dissolve it with the aid of heat in three ounces of distilled water, containing two scruples of arsenious acid in solution; as the solution cools, crystals of arseniate of quina are deposited, which are to be dissolved in distilled water and recrystallized. It is a light, white salt, crystallized in brilliant satiny needles. It is soluble in water, but more so in boiling than in cold water; it is also soluble in weak alcohol, but is insoluble in absolute alcohol or in ether. The dose of it is from one to two grains in divided doses in the course of twenty-four hours. It is usually given in solution in distilled water, to which a little simple syrup may be added."—*Phil. Med. Exam.* Oct., 1846.

Camphor.—An adulteration of this substance with muriate of ammonia has been lately detected in Brussels, and is said not to be uncommon in France; we are not aware that the fraud has been practised in British commerce as yet. It may be readily detected by the action of quicklime, which would liberate the ammonia; or by treating a suspected specimen with water, which would dissolve out the muriate of ammonia.

At a late meeting of the *Societé Medico-pratique* at Paris, many of the members cited facts tending to prove that camphor is a medicine the abuse of which is extremely dangerous. M. Homolle related a case of phthisis in which he prescribed more than twenty grains of camphor, in divided doses in the twenty-four hours; the effect of which was, that the patient was attacked with frightful dyspnœa, continued nausea, and violent palpitation of the heart, all of which symptoms were with much difficulty subdued. Dr. Gaide mentioned the case of a man who was in the habit of taking camphor in very large doses, as a consequence of which he became affected with aggravated diphtheritis. M. Moreau stated, that he had seen a lady attacked with acute meningitis, which only yielded to the most active treatment, from having taken large doses of camphor to cure an obstinate neuralgic affection. Dr. Labarraque said, that a butcher, for whom he had prescribed six grains of camphor, was attacked with violent vomiting which nearly proved fatal.—*Ibid.*

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Castor Oil.—The mildness and certainty of operation of this cathartic give it peculiar advantages in the treatment of many diseases; very often, however, its tendency to produce vomiting prevents it from being employed. To remedy this inconvenience, M. Parola proposes the substitution of an extract, an ethereal, and an alcoholic tincture of castor-oil seeds, for the oil itself. The result of his experiments on himself and on numerous sick and convalescent individuals, is as follows:—1st. That the ethereal and alcoholic tinctures have a purgative action four times as strong as the oil obtained by expression, and that they are not so apt to produce vomiting, nor so irritant as the ordinary oil. 2d. That these new preparations remain unalterable for a long period without reference to climate or season. 3d. That the ethereo-alcoholic extract possesses a purgative action comparatively weaker than the marc or pulp from which it is extracted, proving that the seeds contain a principle which is insoluble in alcohol or ether. 4th. The advantage of the new preparations, so far as relates to their not causing vomiting, is easily explained by the smallness of the dose in which they are administered.

M. Righini has directed much consideration to the devising of a formula for prescribing castor-oil, and the following form, in which the purgative properties are not in the least diminished, he states to be free from the usual inconveniences of a dose of this medicine:—Take of finely-powdered gum-arabic, ʒii.; pure water, ʒiii.; make a mucilage with a small quantity of water, and then add of castor-oil ʒi.; mix carefully, and afterwards pour in, while agitating the mixture, the rest of the water; finally add with constant agitation, the filtered juice of one orange, and one ounce of simple syrup."—*Ibid.*

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The Valerianate of Zinc appears to be a most valuable addition to the materia medica, combining the properties of an antispasmodic and a tonic, and, consequently, being peculiarly adapted for the treatment of neuralgic affections. Devay, who has employed it very extensively, states, that he has found it most useful in the treatment of facial neuralgia and of vertigo. After a fair trial of the remedy in many cases, we can confirm his observations, as also the fact noticed by him, that this new chemical combination proves much more beneficial than the oil of valerian and oxide of zinc prescribed together. The high price of the salt unfortunately prevents clinical observations from being made in charitable institutions as

the consequent infiltration of serum into the cellular membrane, are the result of a passive congestion, having but little disposition to terminate in inflammation. The essential treatment, therefore, consists in the exhibition of iodide of iron, which operates by removing the deficiency of fibrine and hæmatosine in the blood, and promoting the absorption of the lymph effused into the cellular membrane, the natural consequence of venous and lymphatic obstruction. Some practitioners recommend uninterrupted decumbiture, with or without scarification of the cervix uteri. I have seen the horizontal position continually employed during many months, without observing any improvement in the tumor; and I believe it will be found that no patient in a state of anæmia can bear such constant confinement without increasing the constitutional disorder. Having never found it necessary, in the treatment of this disease, to have recourse to scarifications, I cannot speak of their effect, although it appears to me they may be calculated to afford temporary relief, should the disease be found to extend to the cervix uteri.—*Lon. Med. Gaz., Sept. 18th.*

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Castor Oil.—The mildness and certainty of operation of this cathartic give it peculiar advantages in the treatment of many diseases; very often, however, its tendency to produce vomiting prevents it from being employed. To remedy this inconvenience, M. Parola proposes the substitution of an extract, an ethereal, and an alcoholic tincture of castor-oil seeds, for the oil itself. The result of his experiments on himself and on numerous sick and convalescent individuals, is as follows:—1st. That the ethereal and alcoholic tinctures have a purgative action four times as strong as the oil obtained by expression, and that they are not so apt to produce vomiting, nor so irritant as the ordinary oil. 2d. That these new preparations remain unalterable for a long period without reference to climate or season. 3d. That the ethereo-alcoholic extract possesses a purgative action comparatively weaker than the marc or pulp from which it is extracted, proving that the seeds contain a principle which is insoluble in alcohol or ether. 4th. The advantage of the new preparations, so far as relates to their not causing vomiting, is easily explained by the smallness of the dose in which they are administered.

M. Righini has directed much consideration to the devising of a formula for prescribing castor-oil, and the following form, in which the purgative properties are not in the least diminished, he states to be free from the usual inconveniences of a dose of this medicine:—Take of finely-powdered gum-arabic, ℥ii.; pure water, ℥iii.; make a mucilage with a small quantity of water, and then add of castor-oil ℥i.; mix carefully, and afterwards pour in, while agitating the mixture, the rest of the water; finally add with constant agitation, the filtered juice of one orange, and one ounce of simple syrup."—*Ibid.*

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The Valerianate of Zinc appears to be a most valuable addition to the materia medica, combining the properties of an antispasmodic and a tonic, and, consequently, being peculiarly adapted for the treatment of neuralgic affections. Devay, who has employed it very extensively, states, that he has found it most useful in the treatment of facial neuralgia and of vertigo. After a fair trial of the remedy in many cases, we can confirm his observations, as also the fact noticed by him, that this new chemical combination proves much more beneficial than the oil of valerian and oxide of zinc prescribed together. The high price of the salt unfortunately prevents clinical observations from being made in charitable institutions as

to its effects. Valerianate of zinc is very readily decomposed, most acids setting free the valerianic acid, and combining with oxide of zinc. It also undergoes partial decomposition if exposed to the air, or even if kept in badly-stoppered bottles, when it emits a strong valerian odor—the perfect salt having but a very feeble odor, being not completely soluble in water. The best characteristics of its purity are, its being in brilliant, pearly, tabular crystals of a snowy whiteness; its neutrality to litmus paper; its complete solubility in water, and its possessing but a very feeble odor of valerian. The dose of it is from three-fourths of a grain to one grain two or three times a day; it may be prescribed in the form of pill made with a little mucilage, or conserve of red roses; or in solution in orange-flowers. The compounder must bear in mind that the crystals of valerianate of zinc do not dissolve readily in cold water, floating on the surface in consequence of their lightness; they should, therefore, be first incorporated with a few drops of water in a mortar.—*Ibid.*

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Arsenical distinguished from Antimonial Deposits in the Use of Marsh's Apparatus.—Various plans have been proposed to enable the experimentalist to distinguish easily arsenic from antimony, when a metal is deposited by the combustion of hydrogen in Marsh's apparatus. M. Cottereau has lately suggested a new method, which consists in exposing the deposit, obtained on a porcelain capsule, to the vapor of phosphorus. Some pieces of phosphorus are placed on a flat porcelain tile, and the capsule with the deposit is then inverted over them, and allowed to remain exposed to the phosphorus vapor at the ordinary temperature. The arsenical deposit disappears under these circumstances in the course of a few hours, while the antimonial stain remains as long as a fortnight before it disappears, and then it is sometimes only partially removed. On exposing the capsule to a slow current of sulphuretted hydrogen gas, the deposit soon reappears of a bright-yellow color if arsenical, and of an orange-red color if antimonial.—*Lon. Med. Gaz.*

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"A dog was kept for sixteen hours without food. At noon he was made to swallow 15 centigrammes (=2.3 grains) of arsenic, and in a quarter of an hour afterwards 560 grammes (17 oz.) of fresh calf's blood. The animal experienced tremors, thirst, nausea, and depression; but there was neither vomiting nor purging, nor was any urine passed.

"In three days the same dog was dosed with 30 centigrammes (=4.6 grains) of arsenic; and in about twelve minutes, he was made to swallow 375 grammes (11½ oz.) of blood—with a like favorable result. In the evening, the dog was free from any abnormal symptoms. On the fifth day, 45 centigrammes (= about 7 grains) of arsenic were given to the animal immediately, and afterwards 275 grammes of blood (8½ oz.) The results were equally satisfactory, and in 24 hours a *pterygium* of the right eye, from which the dog had previously suffered, entirely disappeared! On the seventh day, the unfortunate dog being again selected, M. Apoiger administered 60 centigrammes (= 9¼ grains) of arsenic, and 250 grammes of blood (about 8 oz.) The dog perspired (?) to such a degree that it appeared as if it had been taken out of water. The other symptoms from which it suffered, were purging, urination, and hoarseness! On the ninth day, 90 centigrammes (= nearly 14 grains) of arsenic were given, and 180 grammes of blood (about 5½ oz.) In addition to the above symptoms, the dog suffered from convulsions and partial paralysis of the legs. Towards the close of the day, however, they all disappeared. No other experi-

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"Some hours after the inspection, four ounces of a thick pulpy fluid, which had a distinct odor of hydrocyanic acid, were taken from the cardiac extremity of the stomach, and in the clear fluid obtained from this by filtration, the test by the protosulphate of iron failed in producing the distinctive blue color.

"Ninety hours after death the remaining contents of the stomach, amounting to about fourteen fluid ounces, and consisting of half-digested animal food, bread, and apparently malt liquor, having a faint odor of prussic acid, were put into a retort, with the addition of some sulphuric acid. The retort was placed on a sand bath, and distilled with a gentle heat for three hours, when two ounces of a clear fluid had collected in the receiver, having a distinct odor of prussic acid, masked, however, by the peculiar sour smell of half-digested food.

"1. On rendering a portion of the distilled liquid alkaline by potash, the addition of a solution of the protosulphate of iron produced a dirty green precipitate, which by a few drops of hydrochloric acid was changed to a deep Prussian blue color.

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A late number of the London Medical Gazette contains the fullest account of its discovery, process of manufacture, etc., that we have anywhere seen, and we have accordingly transferred it to our *Record.* Experiments made in this city, have shown that the addition of a moderate quantity of sulphuric acid to the nitric, in the process of Dr. Otto, described in the extract, produces a more perfect article, but that spontaneous combustion is more apt to occur in drying.—*Medical Examiner.*

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Scotch Medical Colleges.—The University of St. Andrew's is the only one of these colleges which grants degrees to candidates who do not reside in the town in which they are situated for at least one session, and take out certificates from their professors. Fellows, licentiates, and members of the colleges of surgeons, are admitted to examination on production of their diplomas: and all other candidates are required to produce the usual certificates obtained during four complete winter sessions. The periods of graduation are the first Tuesday in May and the first Tuesday in August. As many surgeons throughout England and Ireland are desirous of obtaining the title of Doctor of Medicine without absenting themselves from home for any length of time, and many students are anxious to secure the same qualification without being obliged to pay for additional certificates, it is desirable that these regulations should be generally known.

The only two institutions which grant degrees without residence, or payment of extra fees to particular professors, are the Universities of London and St. Andrew's. They both, however, require as protracted and perfect a course of study, and submit the candidate to as severe examinations, as any of the other colleges. Formerly the University of St. Andrew's granted its diploma to medical practitioners without examination, by which that qualification was brought into discredit; but for some years it has been even more strict than many other establishments for medical education. In our Student's Number of last year, we printed the regulations of St. Andrew's University in full, with a detailed account of the examination, which may be obtained at the office of this journal.

The Universities of Edinburgh and Glasgow require four years' study and a year's residence, with the usual certificates. That of Glasgow receives certificates from all the schools; but that of Edinburgh has, lately, preferred those obtained at medical colleges. In this respect, it appears, it has at length given way, having seen the necessity of keeping pace with the progress of events, and submitting to the test of competition.

The degrees granted by the Scotch colleges cost about £25.—*Med. Exam., from the Dublin Med. Press.*

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Regulations for Medical Graduation in the University of Dublin.—The times of graduation are Shrove Tuesday and the first Tuesday in July. The medical examinations terminate the Tuesday of the preceding week. Candidates must previously have completed their medical education, and produced a chart testifying to the details of the same, and subscribed by the registrar to the professors in the School of Physic, as well as by the persons signing the certificate.

1st. Candidates *who have graduated in arts* may obtain the degree of

Bachelor of Medicine at any of the ensuing half-yearly periods of graduation, provided the requisite medical education and examinations shall have been accomplished. The payment at entrance is £15. The fees for studying in arts, during four years, are £7 10s. each half year; and the fees for graduation in arts £8 17s. 6d.

The graduation fees for the degree of Bachelor of Medicine are £11 15s. The testimonium of the B.M. degree will contain the following certificate: "Testamur sedulam operam medicinæ navassæ et examinationes coram professoribus feliciter sustinuisse."

The medical education of a Bachelor of Medicine comprises attendance on the following courses of lectures (of which three, at the discretion of the candidate, may be attended at the University of Edinburgh), in the School of Physic established by act of Parliament, provided that one and not more than three of the courses which begin in November be attended during each of four sessions. The courses are—on anatomy and surgery, chemistry, botany, materia medica and pharmacy, institutes of medicine, practice of medicine, midwifery (by the professor to the College of Physicians), clinical lectures at Sir Patrick Dun's Hospital during at least one session of six months, as delivered by the professors in the School of Physic.

The fees for attendance on the clinical lectures are regulated by act of parliament—they amount to £3 3s. to the professors for each three months' attendance, and (provided the student be of two years' standing in the university) £3 3s. to the treasurer of the hospital for the first year, with a proportionate sum for any longer period. The fees for each of the other courses are £4 4s.

The examinations for the degree of Bachelor of Medicine are conducted by the Regius Professor of the University, the six professors of the School of Physic, and the Professor of Midwifery to the College of Physicians.

No further examination is requisite for the degree of Doctor of Medicine, it may be taken at the expiration of three years from taking the degree of M.B. The fees for the degree of Doctor of Medicine, which entitles the possessor to the same elective privileges as the degree of Master of Arts, are £22.—*Ibid.*

OBITUARY.

Death of Dr. Bostock.—This distinguished physician died in London, in August last, at the age of seventy-three. His disease is reported to have been *Cholera*—of course of the Sporadic variety.—*New York Annalist.*

Dr. John Thompson, late Professor of General Pathology in the University of Edinburgh, on the 11th of October last, in the 82d year of his age. He was eminent both as a teacher and practitioner, and is well known as an author of various works on medical science, of which his lectures on Inflammation, his edition of Fourcroy, his account of the Varioloid, and his life of Cullen are the most celebrated. His life was a busy and useful one. Clinical lecturing owes to him its existence in Edinburgh. He gave there, the first separate course of Lectures on Surgery. He was one of the celebrated eight who commenced the *Edinburgh Review*. It was he who succeeded in inducing the College of Surgeons, in Edinburgh, to found a professorship of Surgery, and he delivered the course for sixteen years. He was also the founder of its Museum. He established a Dispensary, from which the poor were visited at their own houses. He was a warm champion of the Non-Mercurial Treatment of Syphilis. He was President of the College of Physicians. He delivered the first lectures in Edinburgh on Pathological Anatomy, in preference to a symptomatology, and collected the finest collection of colored pathological drawings, with the histories of the diseases attached, now in existence, and worth $10,000. Of such a man we may safely say, that he has raised a monument more durable than brass. He was sceptical as to the power of medicines, and too honest to conceal his want of faith, which somewhat diminished his success as a practitioner. His two sons are Professors.—*Ibid.*

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An Introductory Address delivered before the Medical Class of the University of Pennsylvania. By Samuel Jackson, M.D. Nov. 3d, 1846. 8vo. pp. 15.

Introductory Lecture read at the Commencement of the Course on the Institutes and Practice of Medicine. By S. Henry Dickson, M.D., Prof. Nov. 9, 1846. Charleston, 8vo. pp. 35. - - - - - - - - - - - 217

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Art. XIX.—Lectures on Subjects connected with Clinical Medicine, comprising Diseases of the Heart. By P. M. Latham, M.D., Fellow of the Royal College of Physicians, etc. Phila., Barrington & Haswell, 1847. 8vo., pp. 362. - 229

Art. XX.—The Water-Cure in Chronic Diseases, etc. By James M. Gulley, M.D., etc. New York, Wiley & Putnam, 161 Broadway. 12mo., pp. 404. - - - 230

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ART. XXIII.—Encyclopædia Americana, Supplementary Volume; a Popular Dictionary of Arts, Sciences, Literature, History, Politics, and Biography. Vol. XIV. Edited by HENRY VETHAKE, L.L.D., etc. Phila., Lea and Blanchard, 1847. Large 8vo., pp. 663. - - - - - - 239

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TO READERS AND CORRESPONDENTS.

Several articles intended for the present number, have been necessarily deferred until our next.

Communications have been received from Professors Stevens, Beck, Drs. Dewees and Hall, of this city, and Drs. N. S. Davis, North, Payne, Turner, Hay, and several others, all of which shall find a place in our next.

We have received since the publication of our last the following works :—

Hand-Book of Human Anatomy, General, Special and Typographical. Translated from the original German of Alfred Von Behr, and adapted to the use of the English student. By John Birkett, Fellow of the Royal College of Surgeons, England, etc. etc. Philadelphia: Lindsay & Blakiston. 1847. Small 8vo., pp. 487.

Materiæ Medica and Therapeutics, including the Preparations of the Pharmacopeias of London, Edinburgh, Dublin, and of the United States, with many new Medicines. By J. Forbes Royle, M. D., F. R. S., Prof. of Mat. Med. & Therapeutics, King's College, London. Edited by Joseph Carson, M. D., Prof. of Mat. Medica, in the Philadelphia College of Pharmacy, etc., etc. With 98 Illustrations. Philadelphia, Lea & Blanchard, 8vo., pp. 689.

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A Practical Treatise on Inflammation, Ulceration, and Induration of the Neck of the Uterus, with remarks on the Value of Leucorrhœa and Prolapsus Uteri, as Symptoms of Uterine Disease. By James Henry Bennet, M. D., etc. Philadelphia, Lea & Blanchard, 1847. 12mo., pp. 146.

Encyclopædia Americana, Supplementary Volume; a Popular Dictionary of Arts, Sciences, Literature, History, Politics, and Biography. Vol. XIV. Edited by Henry Vethake, L.L.D., etc. Philadelphia, Lea & Blanchard, 1847. Large 8vo., pp. 663.

Reports from the Pennsylvania, New York State, and the Bloomingdale Asylums for the Insane, for 1847.

The following Journals have been received in Exchange :—

The London Medical Gazette.
The British and Foreign Medical Review.
The Provincial Medical and Surgical Journal.
The Dublin Medical Press.
The Dublin Quarterly Journal of Medical Science.
The London and Edinburgh Monthly Journal of Medical Science.
The Illinois Medical and Surgical Journal.
The New Orleans Medical Journal.
The Boston Medical and Surgical Journal.
The Western Journal of Medicine and Surgery.
The St. Louis Medical and Surgical Journal.
The Philadelphia Medical Examiner.
The Southern Journal of Medical Science.
The British American Journal of Medical and Physical Science.
The Southern Journal of Medicine and Pharmacy.
The American Journal of Pharmacy.
The American Journal and Library of Dental Science.
The Buffalo Medical and Surgical Journal.
The New York Annalist.
Western Lancet.
Missouri Medical and Surgical Journal.
Stocton's Dental Intelligencer.
La Lancette Canadienne, Journal Medico-Chirurgical.
New York Medical & Surgical Reporter.